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University of California, Santa Barbara

General Catalog

2000/2001

University of California, Santa Barbara
Published at Santa Barbara, California 93106
Volume 41, July 2000

Price on Campus: **$6.46**
Domestic Mail: **$9.81**
International Airmail: **$15.00**

To order a *General Catalog* call or write:

UCSB Bookstore
P.O. Box 13400, University Center
University of California, Santa Barbara
Santa Barbara, CA 93106-6090

Telephone: (805) 893-2961

One of a series of administrative publications
of the University of California, Santa Barbara

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This publication is available in alternative formats, upon request.

UCSB

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

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Instructional Development - Photo Services, *all faculty profiles, 12 (bottom), 13, 30, 34, 37, 48, 53 (top), 59, 93, 119, 157, 175, 185, 217, 221, 233, 251, 263, 267, 285, 301, 313, 325, 361, 367, 383, 431, 439*
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ACCREDITATION

The University of California, Santa Barbara is fully accredited by the Accrediting Commission for Senior Colleges and Universities, Western Association of Schools and Colleges. Accreditation documents are available for review in the Office of the Executive Vice Chancellor, Cheadle Hall 5105A.

EQUAL OPPORTUNITY AND NONDISCRIMINATION

The University of California, in accordance with applicable Federal and State law and university policy, does not discriminate on the basis of race, color, national origin, religion, sex, disability, age, medical condition (cancer-related), ancestry, marital status, citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran. The university also prohibits sexual harassment. This nondiscrimination policy covers admission, access, and treatment in university programs and activities.

Inquiries regarding the university's student-related nondiscrimination policies may be directed to: Raymond Huerta, Affirmative Action Office, Telephone: (805) 893-2089.

Profiles of selected members of UCSB's faculty can be found on pages 59, 93, 119, 157, 175, 185, 217, 221, 233, 251, 263, 267, 285, 301, 313, 325, 361, 367, 383, 395, 431, 439.

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Calendar, 2000-2001

Note: Dates subject to change without notice.

	Fall 2000	*Winter 2001*	*Spring 2001*
Undergraduate admission Application filing period for undergraduate admission, to be filed with the University of California, Undergraduate Application Processing Service, P.O. Box 23460, Oakland, CA 94623–0460.	November 1–30, 1999	July 1-31, 2000	October 1-31, 2000
Undergraduate intercampus transfer Application filing period for intercampus transfer, to be filed with the University of California, Undergraduate Application Processing Service, P.O. Box 23460, Oakland, CA 94623–0460.	November 1–30, 1999	July 1-31, 2000	October 1-31, 2000
Undergraduate returning students Application filing period for readmission, to be filed with the Office of the Registrar by undergraduate students who have been absent for one or more quarters or who withdrew during their last quarter of attendance at UCSB. Applications may be accepted after this deadline on a space available basis only.	November 1–30, 1999	July 1-31, 2000	October 1-31, 2000
Graduate admission Final date for filing applications, application fees, and credentials for admission to graduate status, to be filed with the Graduate Division. (Academic units may have an earlier deadline. Applicants should verify deadlines with the department.)	May 1, 2000 (Monday)	November 1, 2000 (Wednesday)	February 1, 2001 (Thursday)
Registration begins	May 6, 2000 (Saturday)	October 21, 2000 (Saturday)	January 31, 2001 (Wednesday)
Quarter begins	September 17, 2000 (Sunday)	January 7, 2001 (Sunday)	April 1, 2001 (Sunday)
Pre–instructional activities: Required testing, advising, meetings, and new student orientation	September 18-22, 2000 (Monday-Friday)	January 7, 2001 (Sunday)	April 1, 2001 (Sunday)
First day of instruction	September 25, 2000 (Monday)	January 8, 2001 (Monday)	April 2, 2001 (Monday)
Last day of instruction	December 6, 2000 (Wednesday)	March 16, 2001 (Friday)	June 7, 2001 (Thursday)
Final examinations	December 7-14, 2000 (Thursday-Thursday)	March 17-24, 2001 (Saturday-Saturday)	June 8-15, 2001 (Friday-Friday)
Quarter ends	December 14, 2000 (Thursday)	March 24, 2001 (Saturday)	June 15, 2001 (Friday)
Commencement			June 16-17, 2001 (Saturday, Sunday)

Summer Sessions 2001

Registration begins: April 9, 2001
Pre-Instructional Activities: June 24, 2001
Pre-college Programs begin: June 24, 2001
First day of instruction: June 25, 2001
Last day of instruction,
for 6-week programs: August 3, 2001
for all programs: September 14, 2001

Holidays

Labor Day: Monday, September 4, 2000
Veterans' Day: Friday, November 10, 2000
Thanksgiving: Thursday and Friday, November 23 and 24, 2000
Christmas: Monday and Tuesday, December 25 and 26, 2000
New Year: Monday and Tuesday, January 1 and 2, 2001
Martin Luther King, Jr.'s Birthday: Monday, January 15, 2001
Presidents' Day: Monday, February 19, 2001
Spring Holiday: Monday, March 26, 2001
Memorial Day: Monday, May 28, 2001
Independence Day: Wednesday, July 4, 2001

Correspondence Directory

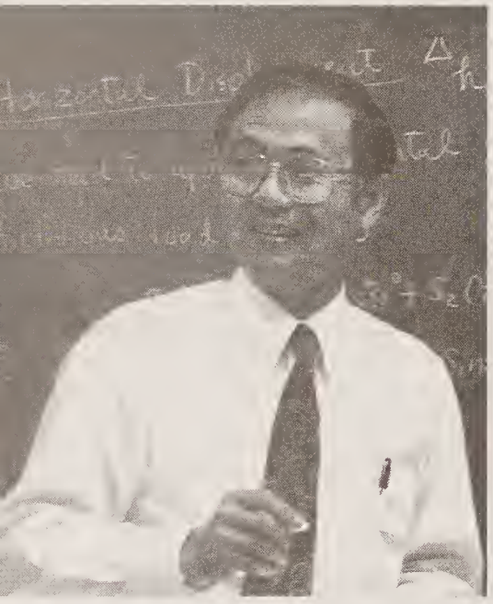
Address all correspondence to: University of California, Santa Barbara / Santa Barbara, CA 93106-3020. For campus directory information, dial (805) 893-8000; (805) 893-2327 V/TDD.*

Office	*Location*	*Telephone*	*Web Site*
Admissions (Undergraduate)	Cheadle Hall 1210	893-2881 V/TDD	www.admit.ucsb.edu
Alumni Affairs	Hollister Research Center	893-2288	www.instadv.ucsb.edu
Affirmative Action	Cheadle Hall 2121	893-2701	www.aa.ucsb.edu
Associated Students	University Center 1500	893-2566	www.as.ucsb.edu
Billing, Accounts Receivable,	SAASB 1212**	893-2155	ucsbuxa.ucsb.edu/BusServ/barc
Collections	Hollister Research Center	893-4204	
Bookstore	University Center	893-3271	www.bookstore.ucsb.edu
College of Creative Studies	Building 494	893-2364	www.ccs.ucsb.edu
College of Engineering	Engineering 1, Room 1030	893-1006 V/TDD	www.engineering.ucsb.edu
College of Letters and Science	Cheadle Hall 1117	893-2038 V/TDD	www.ltsc.ucsb.edu
Counseling and Career Services	Building 599	893-4411 V/TDD	www.career.ucsb.edu
Community Housing (Off-campus)	University Center 3151	893-4371 V/TDD	www.housing.ucsb.edu
Disabled Students Program	SAASB 1201**	893-2668 V/TDD	www.sa.ucsb.edu/dsp
Donald Bren School of Environmental Science and Management	Physical Sciences North 4670	893-7611	www.bren.ucsb.edu
Education Abroad Program			www.uoeap.ucsb.edu
Campus office	South Hall 2431	893-3763	
University-wide administration	6550 Hollister Avenue	893-4762	
Educational Opportunity Program/			www.sa.ucsb.edu/guide/departments/eop.htm
Student Affirmative Action	Building 434, Room 110	893-3235	
Financial Aid	SAASB 2103**	893-2432 V/TDD	www.finaid.ucsb.edu
Graduate Division	Cheadle Hall 3117	893-2277	www.graddiv.ucsb.edu
		893-3803 V/TDD	
Graduate School of Education			
Advanced degrees	Phelps Hall 2311	893-2137	www.education.ucsb.edu
Credentials	Phelps Hall 2517	893-2084	www.education.ucsb.edu
Graduate Students Association	University Center 2502	893-3824	www.gsa.ucsb.edu
Housing and Residential Services			www.housing.ucsb.edu
On-campus	Residential Services 1501	893-2760	
Family Student Apartments	Santa Ynez Apartments	893-4021	
Single Student Apartments	Santa Ynez Apartments	893-3640	
Instructional Development	Kerr Hall 2130	893-4335	www.id.ucsb.edu
International Students and Scholars	Building 434, Room 109A	893-2929	www.oiss.ucsb.edu
Library	Davidson Library	893-2477 V/TDD	www.library.ucsb.edu
News and Communications	Cheadle Hall 1124	893-2191	www.instadv.ucsb.edu/instadv/pahomepage
Ombuds	SAASB 1207**	893-3285	
Police/Fire/Paramedic	Public Safety Building	893-3446	police.ucsb.edu
EMERGENCY ONLY		9-911 or 893-2221 V/TDD	
From Pay Phones		Dial 911	
Registrar	SAASB 1105**	893-3592	www.registrar.ucsb.edu
Relations with Schools	Cheadle Hall 1234	893-2485	www.admit.ucsb.edu
Student Health Service	Building 588	893-3371 V/TDD	www.sa.ucsb.edu/studenthealth
Student Life	SAASB 2201**	893-4569	www.sa.ucsb.edu/osl
Summer Sessions	SAASB 2214**	893-2047	www.summer.ucsb.edu
University Extension	6550 Hollister Avenue	893-4200	www.unex.ucsb.edu
Women's Center	Building 434, Room 141	893-3778	www.sa.ucsb.edu/women'scenter

* Voice or TDD (Telecommunications Device for the Deaf) may be used on these telephones.

** SAASB: Student Affairs and Administrative Services Building

A Word from the Chancellor



As we begin the first academic year of the new millennium, I am so proud and pleased to welcome you to UCSB. As new or returning students, you are entering a most exciting and important phase of your lives.

UCSB has a tradition of emphasizing both our undergraduate and graduate programs with a friendly environment in which students, staff, and faculty from richly diverse backgrounds and perspectives will explore and learn together. We are all deeply committed to helping you achieve your academic and personal goals, and we hope that you will take full advantage of all that our campus has to offer.

Our stature as a world-class research university is unquestioned. In 1995, UCSB was elected a member of the 61-member Association of American Universities which comprises the top two percent of all the universities and colleges in the United States and Canada. In 1997, the campus was ranked in a national study as one of the top two public research universities in the country based on per capita faculty productivity and scholarship. Even more recently, a survey of U.S. universities in 21 fields by *Science Watch* ranked UCSB among the top ten highest impact universities based on the citation rate of research papers by our faculty. Our renowned faculty includes a 1998 Nobel Prize winner in chemistry; a 1997 National Humanities Medal winner; Guggenheim fellows; fellows of the National Endowment for the Humanities; recipients of the National Medal of Science and National Medal of Technology; and members of the National Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Engineering.

The quality and stature of our undergraduate programs equal that of our research programs. In fact, in the September 1999 issue of *U.S. News and World Report*, UCSB's undergraduate programs were ranked number 13 among all public universities. Many of our undergraduates take the opportunity to pursue research and other scholarly activities by working with faculty mentors. At UCSB, the intellectual diversity that is crucial to our scholarly community is intertwined with a demographic diversity and helps to define excellence for us.

These honors and other recognitions of our academic excellence are testimony to the preeminence of our professors, the academic programs in which you will participate, and the very high quality and diversity of the student community of which you are an important and valued member.

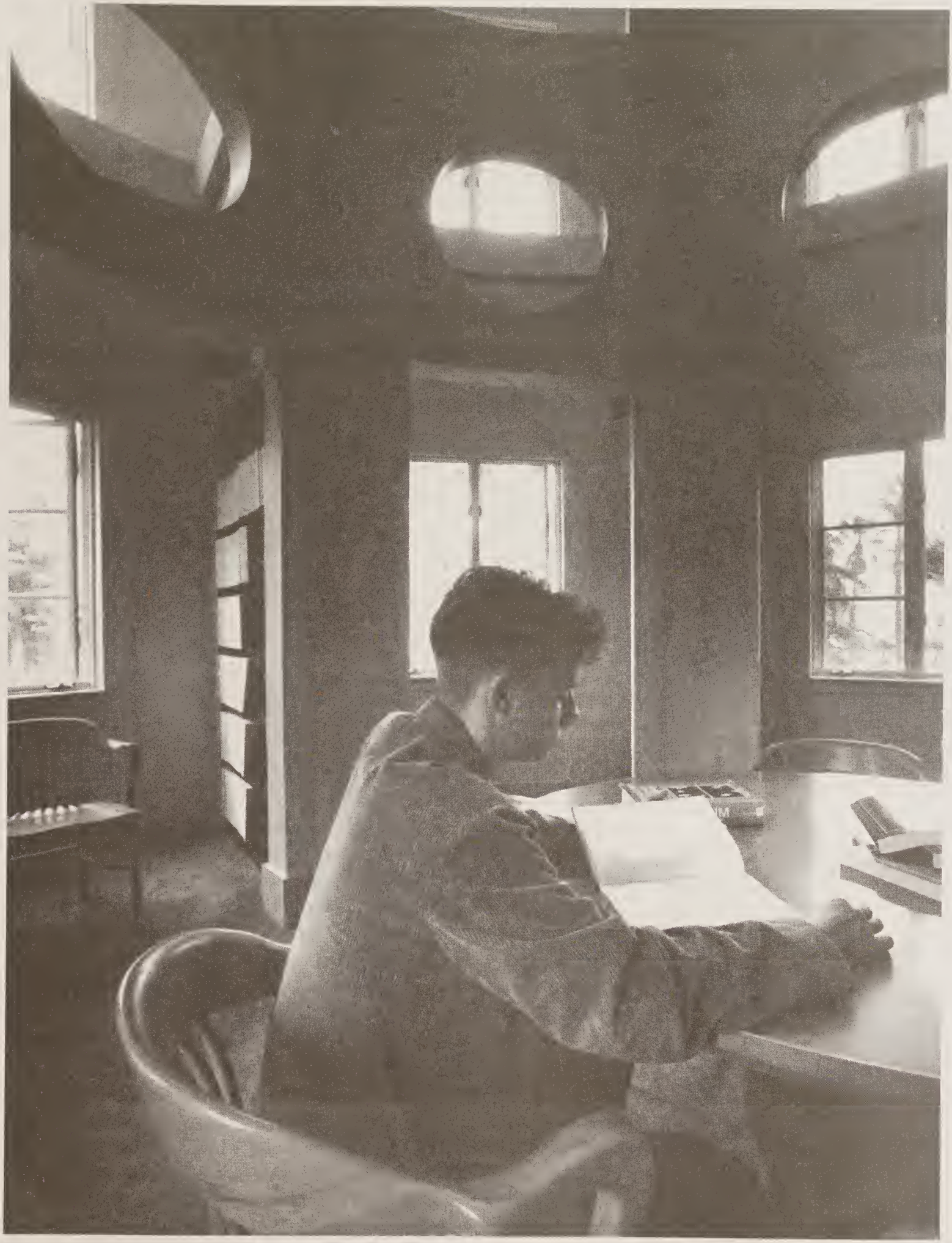
There are many opportunities here for you to learn about yourself, your community, and your world. Perhaps you will join some of UCSB's 300 clubs, or participate—as do 80 percent of your fellow students—in intramural sports. You could become a volunteer in the community, as nearly half of our students do, or become active in student life through the Associated Students, Graduate Students Association, special internships, or any number of peer work opportunities.

Whatever you decide to do, we are here to support and encourage your efforts to become the best that you can be. This is a wonderful place for you to learn and to blossom.

Welcome again!

Henry T. Yang

HENRY T. YANG



Where Dreams Come True

The national Graham/Diamond study of university quality ranks UCSB as one of the top two public research universities in the country.

The University of California, Santa Barbara, a major research institution which is, at its core, an outstanding undergraduate university.

Away from urban pressures, yet deeply involved in the intellectual and cultural issues of our time, it is a place where learning and living are as natural as the Santa Barbara coastline and the nearby Santa Ynez Mountains. It is a place that nourishes equally mind, body, and spirit.

For all its natural beauty, however, UCSB's uniqueness lies elsewhere. It is found in its superb learning environment, in the relaxed relationship between faculty and students, and, above all, in a deep-rooted commitment of professors to ensuring that all students reach their fullest potential.

While pursuing research at the highest levels, UCSB's faculty is passionately dedicated to teaching. They engage and challenge their students almost from the day of their arrival on campus. And the intellectual sparks may fly virtually anywhere—in the classroom, in one of UCSB's superbly equipped laboratories or music studios, or simply over lunch in the University Center. But these are not merely battles of wit. They are expressions of a conviction of UCSB professors that teaching and research go hand in hand, that the doors of knowledge can only be opened through real partnership between student and teacher.

In part, the easy, informal relationships between faculty and students reflect UCSB's relative youth. Unlike older institutions, UCSB has been able to explore less tradition-bound approaches to education. A University of California campus since 1944, it stresses close collaboration not only between students and teachers, but also across academic lines. You'll find chemists working alongside physicists, linguists collaborating with computer experts. To foster such cooperative scholarship, which may well be a model for the university of the 21st century, the National Science Foundation has established seven interdisciplinary research centers at UCSB.

As early as their freshman year, students will find themselves in the presence of world-renowned scholars. UCSB's 900 full-time faculty includes many members of leading academic societies—the National Academy of Arts and Sciences, the National Academy of Sciences, the National Academy of Engineering—as well as fellows of the National Endowment for the Humanities, winners of the National

Medal of Science and the Nobel Prize. In the arts, sciences, and engineering, many of its departments are considered among the best in the nation by such measures as output of significant scholarly papers and peer opinion. So, too, is UCSB as a whole. Already ranked as a category 1 research university by the Carnegie Commission, UCSB is one of 61 elected members of the prestigious Association of American Universities. Recognized as a premier research institution, it ranks in the top two in research excellence and productivity among American public institutions.

At UCSB, living and learning are deeply intertwined. Extraordinarily rich in people and programs, the campus remains small enough for students to enjoy an intensely personal educational experience. It has an enrollment of an average of 18,500 students—16,000 of them undergraduates—and a still-expanding physical plant that includes new buildings for engineering, the humanities, social sciences, the sciences, and recreation. Some 2,500 students reside on the campus itself; most of the rest live next door in the bustling student community of Isla Vista,

The Davidson Library has more than 2 million books and bound journals.

with its shops, cafes, and parks. Bicycles are the preferred mode of transportation.

Once a small independent teachers' college, UCSB is today an integral part of the nine-campus University of California system. Chartered in 1868 as a land-grant college, the university is now widely regarded as the nation's pre-eminent public school system of higher education. The university has nearly 7,500 full-time faculty members and some 165,000 students, more than 90 percent of them Californians. About a fourth of the UC students are studying at the graduate professional level, including alumni of UCSB.

Responsibility for governing the system is vested in a corporate board of 26 gubernatorially appointed and elected members known as The Regents of the University of California. The Regents share authority with the University president, the chancellor of each campus, and the Academic Senate, representing the faculty. The latter includes 34 Nobel laureates, more than 900 Guggenheim fellows, and numerous members of national and international academic honor societies.

Relocated from its former site in Santa Barbara's Riviera section after World War II, UCSB occupies a picturesque 989-acre palm- and eucalyptus-lined plateau overlooking the Pacific that once served as a U.S. Marine Corps base. The flat terrain facilitates access for students with mobility impairments, who also get assistance from the Disabled Students Program. The campus is easily reachable by public transportation. It is adjacent to the Santa Barbara Municipal Airport, which offers flights to Los Angeles, San Francisco, Denver, Phoenix, and other cities. Highway 101, California's major coastal route, passes less than a mile from UCSB, with clearly marked turnoffs to the campus. Santa Barbara is also served by Amtrak and Greyhound Bus Lines, with regular shuttle buses between downtown Santa Barbara and the campus, nine miles away.

Donald C. Davidson Library

UCSB's Donald C. Davidson Library is a major research facility. As a member of the Association of Research Libraries, the Center for Research Libraries, and the Research Libraries Group, it participates in cooperative programs and policy development with other major research libraries to provide collections and services for the UCSB community.

The library has approximately 2.5 million books and bound journals. The collection grows by about 50,000 volumes annually. In addition, the library has an excellent collection of maps, technical reports, satellite imagery, government documents, manuscripts, and microformat materials.

UCSB's library collection is housed in two buildings: the Davidson Library and the Arts Library. Davidson Library houses the general collection as well as several specialized units and services, which offer materials on specific subject areas or in specialized formats. Examples include the Science and Engineering Library (which provides more than 5,000 current serial subscriptions, 300,000 volumes, and 550,000 technical reports), the Map and Imagery Laboratory, the Curriculum Laboratory, and the Ethnic and Gender Studies Library. Also located in the Main Library is the Department of Special Collections, which houses rare books and manuscripts as well as several distinguished collections, including the Wyles Collection on the American West, the Skofield Printers' Collection, and other in-depth research collections.

Some of the special services in the Davidson Library include computerized access to the catalogs of all UC libraries; computerized access to citations in bibliographic data bases of recent science and engineering literature; terminals connected to the main computer center; and a Kurzweil Reading Machine for the blind, jointly owned and operated with the Disabled Students Program.

The Arts Library is a full-service branch library that supports academic programs in art and music. In addition to the substantial book and

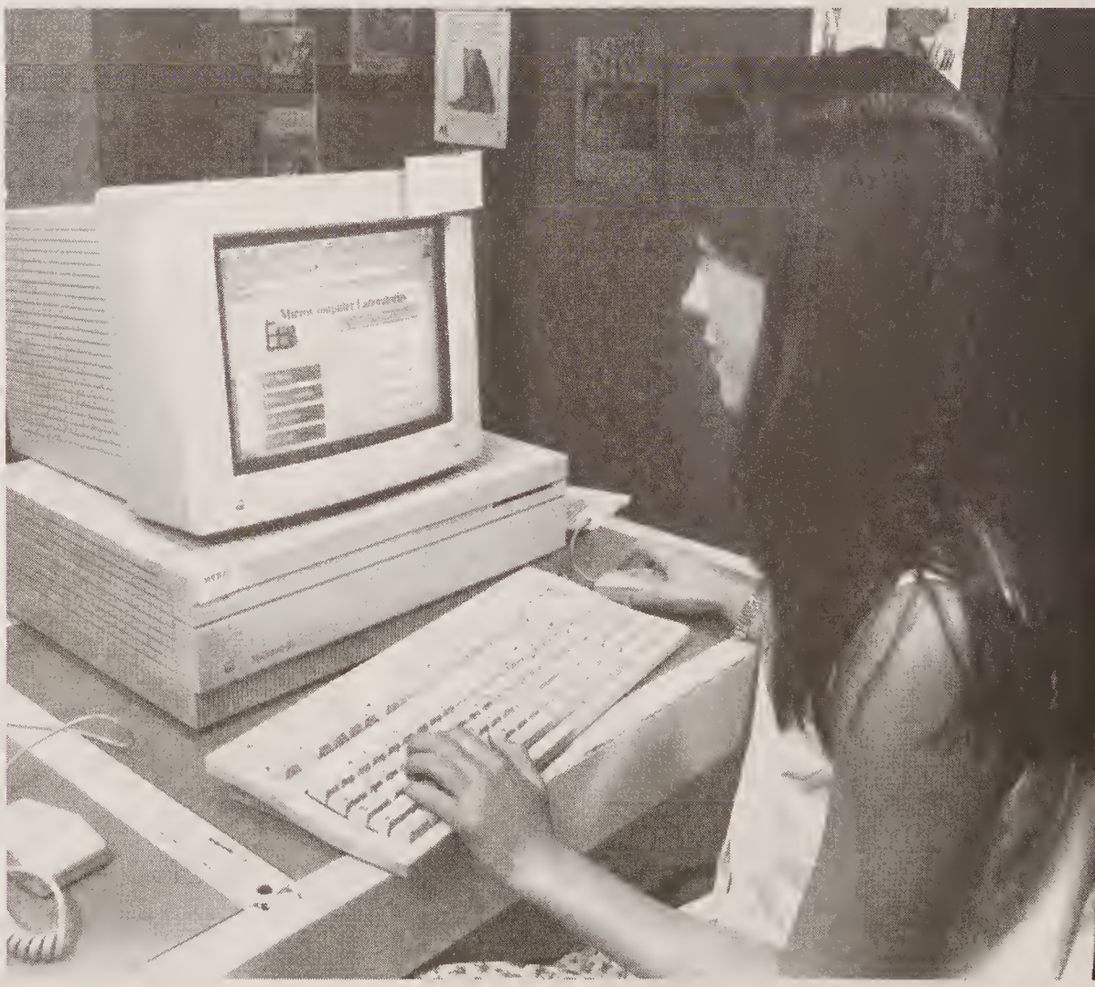
UCSB is one of 61 members of the pretigious Association of American Universities and ranked as a Research 1 university by the Carnegie Foundation, placing the campus in the top tier of research universities

The library's top-ranked Map and Imagery Lab features sophisticated technology, such as this Z240 stereoscope, which aids students and researchers in aerial photo interpretation.

journal collections, special materials include more than 60,000 phonograph records and a collection of music scores.

Computing Facilities

Computing facilities on campus are readily available to all registered UCSB students. Instructional Computing (IC) has an Open Access lab with both Macintosh and IBM computers for student use. Access to instructional labs are designated by course requirements. Computing facilities set aside for the use of classes are IC labs (Power Mac 7200, G3, and G4 Labs; Pentium 166, 200, and 333 Labs; Open Access Lab; and New Media Center in Kerr Hall), the Humanities and Social Sciences Computing facility (limited to faculty, staff, and graduate students), the Life Sciences Computing Facility, the Oceanography computing facility, the Storke Pentium lab, and the Engineering Computing Infrastructure (ECI). Hours and restrictions vary with individual labs. For additional information visit our web site: www.ic.ucsb.edu



UCSB's Student Access computing initiative provides all students with electronic mail services as well as on-line access to their own academic records, and makes a wealth of educational resources from throughout the world available through the Internet.

Instructional modules are produced at the faculty multimedia development center in Kerr Hall.

UCSB was one of the four original sites of the ARPAnet, a forerunner of today's global internet.

Instructional Development

Instructional Development enhances teaching and research with its two branches of Instructional Consultation and Instructional Resources.

The Office of Instructional Consultation offers expertise in various teaching methods, curriculum development, testing, and evaluation. The Instructional Improvement Program provides financial backing to faculty involved in innovative instructional projects. All of this enables faculty to teach in the most effective manner and to bring to students the fruits of their latest research.

Instructional Resources provides numerous technological aids to support the educational process. Sophisticated student learning and language laboratories, comprehensive media production, and presentation support are among the many services offered.

Meyer Wolfe
Red Eye's Hall
1934
lithograph
The Ken Trevey Collection
University Art Museum

University Art Museum

The newly renovated University Art Museum is located in the shadow of Storke Tower, adjacent to the University Center. Three galleries are devoted to the Museum's permanent collections and two feature regularly changing exhibitions. The exhibition program, balanced between historical and contemporary art, architecture, and design traditions, features art and artists of diverse global cultures. Exhibitions complement academic programs, particularly in the arts and humanities, and interdisciplinary projects are encouraged. At the end of each academic year, the museum showcases the work of undergraduate students in the Department of Art Studio. Student internships and courses in museum practices are offered through the Department of the History of Architecture and Art.

The permanent collections include approximately 7,000 art objects, ranging from ancient terra cottas to old master drawings to contemporary sculpture, with work produced in Europe, America, Africa, and Asia. The Sedgwick Collection of 15th- 16th- and 17th-century European paintings and the Morgenroth Collection of Renaissance medals and plaquettes are features in the new "Age of Discovery: Europe in the Renaissance" Gallery. The Architecture and Design Collection contains the archives of 40 Southern-California based architects, landscape architects, urban planners, and designers.

The University Art Museum is accredited by the American Association of Museums. It is open Tuesday, 12:00-8:00 p.m., Wednesday-Sunday, 12:00-5:00 p.m., and is closed on Monday and major holidays. Call the Museum at (805) 893-2951 for information on tours and special programs. Visit our web site: www.uam.ucsb.edu

Fernand Lungren
In the High Sierras
c. 1904-1905
oil on canvas
Fernand Lungren Bequest
University Art Museum

Dance, music, and theater events range from classical to popular to avant-garde. Left: The Acting Company in Comedy of Errors, below: Pilobolus Dance Theater

Arts & Lectures

Arts & Lectures serves the university and the community by presenting more than 100 public events each year. These events enhance the intellectual life of the campus and provide unique and varied cultural experiences.

Each year, more than 20 professional artists and ensembles perform in Campbell Hall and give master classes, lecture demonstrations, and workshops on campus and in the community. Dance, music, and theater events range from classical to popular to avant-garde.

Arts & Lectures also presents distinguished speakers who lecture on subjects of enormous diversity from science and industry to outdoor adventure, history, the arts, and current headlines. Numerous award-winning authors give readings of their work. Of broad general interest, the lectures are often cosponsored with other organizations and programs.

Each quarter Arts & Lectures screens more than a dozen films; many are Santa Barbara premieres. The films cover a wide range of style and content and often complement academic courses. Frequently, filmmakers are on hand to introduce their films and answer audience questions.

Arts & Lectures also sells advance tickets for the Departments of Dramatic Art and Music as well as the Multicultural Center, which offer extensive and varied performances in classical and contemporary music, theater, and dance.

The Arts & Lectures Ticket Office is located in Building 402 and is open Monday through Friday, 10 a.m. to 5 p.m. Telephone: (805) 893-3535 v/tdd.

Visit our web site: www.artsandlectures.ucsb.edu

Academic Units

College of Creative Studies

The College of Creative Studies at UCSB is unique in the UC system. It enrolls undergraduate students with demonstrated talent for independent work in the arts, mathematics, or the sciences. Emphases are offered in art (painting, sculpture, and book arts), biology, chemistry, computer science, literature, mathematics, music composition, and physics. Work in the college leads to the bachelor of arts degree in all emphases (with the exception of Computer Science, B.S. only), and, optionally, to the bachelor of science degree in chemistry, mathematics, and physics. In 1999-2000, approximately 275 students were enrolled in the college.

College of Engineering

The College of Engineering offers professional undergraduate education leading to the bachelor of science degree in five disciplines: chemical, computer, electrical, and mechanical engineering, and computer science. The chemical, electrical, and mechanical engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The computer science program is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. The college currently has a combined undergraduate and graduate enrollment of approximately 1,850 students.

College of Letters and Science

The College of Letters and Science, which enrolls approximately 16,000 undergraduates, is the largest undergraduate college on the UCSB campus. The college offers nearly 80 majors and over 30 minors, including a number of interdisciplinary programs, and awards four degrees: bachelor of arts, bachelor of science, bachelor of fine arts, and bachelor of music. In addition, college departments offer a wide range of minors to students interested in pursuing a second area of study.

Graduate Division

UCSB offers advanced programs of study and research leading to the doctor of philosophy, doctor of musical arts, master of arts, master of education, master of environmental science and management, master of fine arts, master of music, and master of science through the Graduate Division. Programs leading to California teaching and service credentials are also offered. Under policies set by the UCSB Graduate Council, the Graduate Division recruits and admits students to all graduate programs, promotes diversity at the graduate level, secures and awards graduate financial support, and administers graduate students' academic records.

Donald Bren School of Environmental Science and Management

The Bren School of Environmental Science and Management is a professional school aimed at training graduate students in rigorous, interdisciplinary approaches to environmental problem solving. The School fosters an integrated view of the environment that focuses not just on the identification of problems, but on their solutions in scientific, societal, and institutional contexts. The School has a unique intercampus dimension and integrates expertise and students from UC Business and Law Schools into its programs. The School offers two graduate degrees. The Master's of Environmental Science and Management is a professional degree intended for students who will enter or re-enter the work-force when they finish. The Ph.D. is a research-oriented degree whose cornerstone is an original work of research presented as a dissertation.

Graduate School of Education

The Graduate School of Education prepares researchers, teachers, and administrators in education and professional psychology. Three-quarters of the graduate students are working on their doctor of philosophy or master of arts degrees. Another one-fourth are enrolled in the teaching credential and M.Ed. program to qualify for elementary and secondary school teaching. A number of students not only work on advanced degrees but also qualify for advanced specialist or service credentials in administration or school psychology.

Undergraduate Degrees and Majors

College of Creative Studies

Creative Studies
with emphases in:
- Art ..... B.A.
  with concentrations in:
  - Painting
  - Sculpture
  - Book Arts
- Biology ..... B.A.
- Chemistry ..... B.A., B.S.
- Computer Science ..... B.S.
- Literature ..... B.A.
- Mathematics ..... B.A., B.S.
- Music—Composition ..... B.A.
- Physics ..... B.A., B.S.

College of Engineering

- Chemical Engineering ..... B.S.
- Computer Engineering ..... B.S.
- Computer Science ..... B.S.‡‡
- Electrical Engineering ..... B.S.
- Mechanical Engineering ..... B.S.

College of Letters and Science

- Anthropology ..... B.A.
  with emphases in:
  - Cultural Anthropology
  - Physical Anthropology
- Aquatic Biology ..... B.S.‡‡
- Art ..... B.A.
- Art History ..... B.A.
  with optional emphasis in:
  - Non-Western Art
- Asian Studies ..... B.A.
- Asian American Studies ..... B.A.
- Biochemistry ..... B.S.
- Biochemistry–Molecular Biology ..... B.S.‡‡
- Biological Sciences ..... B.A., B.S.‡‡
- Biopsychology ..... B.S.
- Black Studies ..... B.A
- Business Economics ..... B.A.‡‡
  with optional emphasis in:
  - Accounting
- Cell and Developmental Biology ..... B.S.‡‡
- Chemistry ..... B.A., B.S.
- Chicano Studies ..... B.A.
- Chinese ..... B.A.
  with concentrations in:
  - Classical Chinese
  - Mandarin Chinese
- Classics ..... B.A.
  with emphases in:
  - Archaeology
  - Civilization
  - Language and Literature
- Communication ..... B.A.‡‡
- Comparative Literature ..... B.A.
  with emphases in:
  - Foreign Language
  - Interdisciplinary
- Computer Science ..... B.A.‡‡
- Dance ..... B.A., B.F.A.
- Dramatic Art ..... B.A.
  with concentrations in:
  - Directing
  - Dramatic Literature, Theory, and Theatre History
  - Playwriting
  - Theatre Design and Technology
- Ecology and Evolution ..... B.S.‡‡
- Economics ..... B.A.‡‡
- Economics–Mathematics ..... B.A.‡‡
- English ..... B.A.
- Environmental Studies ..... B.A., B.S.
- Film Studies ..... B.A.
- French ..... B.A.
- Geography ..... B.A.
- Geological Sciences ..... B.A.
  with optional emphasis in:
  - Science Education
- Geological Sciences ..... B.S.
  with optional concentration in:
  - Engineering Geology/Hydrogeology
  with optional emphases in:
  - Earth Systems
  - Paleobiology
- Geophysics ..... B.S.
- Germanic Languages and Literatures . B.A.
  with emphases in:
  - German Studies
  - Literature
- Global Studies ..... B.A.
  with emphases in:
  - Culture and Ideology
  - Socioeconomics and Politics
- History ..... B.A.
- History of Public Policy ..... B.A.
- Hydrologic Sciences ..... B.S.
  with concentrations in:
  - Biological Sciences
  - Chemistry
  - Geography
  - Geological Sciences
- Individual ..... B.A.‡
- Interdisciplinary Studies ..... B.A.‡
- Islamic and Near Eastern Studies ..... B.A.
- Italian Cultural Studies ..... B.A.
- Japanese ..... B.A.
- Latin American and Iberian Studies .... B.A.
- Law and Society ..... B.A.‡‡
  with optional emphasis in:
  - Criminal Justice
- Linguistics ..... B.A.
  with optional emphases in:
  - Chinese
  - English
  - French
  - German
  - Japanese
  - Slavic
  - Sociocultural Linguistics
  - Spanish
- Mathematical Sciences ..... B.S.‡‡
- Mathematics ..... B.S.‡‡
- Mathematics ..... B.A.‡‡
  with concentrations in:
  - High School Teaching
  - Liberal Arts
- Medieval Studies ..... B.A.
- Microbiology ..... B.S.‡‡
- Music ..... B.A.
  with optional emphasis in:
  - Ethnomusicology
- Music ..... B.M.
  with emphases in:
  - Accompanying
  - Bassoon
  - Cello
  - Clarinet
  - Composition
  - Double Bass
  - Flute
  - French Horn
  - Guitar
  - Oboe
  - Percussion
  - Piano
  - Trombone
  - Trumpet
  - Tuba
  - Viola
  - Violin
  - Voice
- Pharmacology ..... B.S.‡‡
- Philosophy ..... B.A.
  with concentrations in:
  - Core Philosophy
  - Ethics and Public Policy
- Physical Geography ..... B.S.
- Physics ..... B.A., B.S.
- Physiology ..... B.S.‡‡
- Political Science ..... B.A.‡‡
  with optional emphases in:
  - International Relations
  - Public Service
- Portuguese ..... B.A.
- Psychology ..... B.A.‡‡
- Religious Studies ..... B.A.
- Renaissance Studies ..... B.A.
- Slavic Languages and Literatures ..... B.A.
- Sociology ..... B.A.‡‡
- Spanish ..... B.A.
- Speech and Hearing Sciences ..... B.A.
  (closed to new admissions)
- Statistical Science ..... B.A.
- Statistical Science ..... B.S.
  with concentrations in:
  - Actuarial Statistics
  - Applied Statistics
  - Probability and Statistics
- Theatre ..... B.F.A.
  with emphasis in:
  - Acting
- Women's Studies ..... B.A.
- Zoology ..... B.S.‡‡

Undergraduate Minors

Not open to students in the College of Engineering

- Anthropology
- Art History
- Asian American Studies
- Astronomy and Planetary Science
- Black Studies
- Chemistry
- Chinese
- Classics
- Comparative Literature
- English
- French
- Geological Sciences
- German
- Global Peace and Security
- History
- Italian Cultural Studies
- Japanese
- Jewish Studies
- Latin American and Iberian Studies
- Linguistics
- Mathematics
- Mathematics for High School Teaching
- Mathematical Sciences
- Music
- Philosophy
- Physical Education: Athletic Coaching
- Physical Education: Fitness Instruction
- Physical Education: Exercise and Health Science
- Physical Education: Sport Management
- Physics
- Portuguese
- Professional Writing
- Russian
- Sociocultural Linguistics
- Spanish
- Speech and Hearing Sciences
- Statistical Science
- Women, Culture, and Development
- Women's Studies

‡ Declaration of the *Individual* and *Interdisciplinary Studies* majors is subject to the approval of the Executive Committee of the College of Letters and Science

‡‡ Admission to this major is contingent upon successful completion of all courses in preparation for the major with the designated grade-point average. Students who are completing these preparatory requirements will have "pre-major" status

Graduate Degrees and Majors

College of Engineering

Chemical Engineering ..... M.S., Ph.D.
Computer Science ..... M.S., Ph.D.
Electrical and Computer Engineering ..... M.S., Ph.D.
with emphases in:
Communications, Control, and Signal Processing
Computer Engineering
Electronics and Photonics
Materials ..... M.S., Ph.D.
Mechanical Engineering ..... M.S., Ph.D.
Media Arts and Technology ..... M.S.
with emphasis in:
Multimedia Engineering

College of Letters and Science

Anthropology ..... M.A., Ph.D.
with specializations in:
Archaeology
Biological Anthropology
Ethnology
with optional emphasis in:
Women's Studies
Applied Mathematics ..... M.A.
Art History ..... M.A.*
Art History ..... Ph.D.
with optional emphasis in:
Women's Studies
Art Studio ..... M.F.A.
with specializations in:
Ceramics
Painting
Printmaking
Sculpture
Asian Studies ..... M.A.
with optional emphasis in:
East Asian Languages and Cultural Studies
Biochemistry–Molecular Biology .... M.A., Ph.D.
Chemistry ..... M.A., M.S.,
Chemistry ..... Ph.D.
Classics ..... M.A., Ph.D.
with emphases in:
Ancient History
Literature and Theory
Communication ..... M.A.*
Communication ..... Ph.D.
with optional emphases in:
Human Development
Quantitative Methods in the Social Sciences
Comparative Literature ..... M.A.,* Ph.D.
Counseling Psychology
see Graduate School of Education
Dramatic Art ..... M.A., Ph.D.
Ecology, Evolution, and Marine Biology ..... M.A., Ph.D.
Economics ..... M.A.
with optional emphasis in:
Business Economics
Economics ..... Ph.D.
Education *(see Graduate School of Education)*
Engineering *(see College of Engineering*
English ..... M.A.*
English ..... Ph.D.
with optional emphasis in:
Women's Studies
French ..... M.A., Ph.D.
with specialization in:
French Literature and Linguistics
with optional emphasis in:
Women's Studies (Ph.D. only)
Geography ..... M.A., Ph.D.
with optional emphases in:
Cognitive Science
Quantitative Methods in the Social Sciences
Geological Sciences ..... M.A., Ph.D.
Geophysics ..... M.S.
Germanic Languages and Literatures ..... M.A.
Germanic Languages and Literatures ..... Ph.D.
with optional emphasis in:
Women's Studies
Hispanic Languages and Literatures ..... Ph.D.
History ..... M.A.
History ..... Ph.D.
with optional emphases in:
Public History
Women's Studies
Latin American and Iberian Studies ..... M.A.
Linguistics ..... M.A.*
Linguistics ..... Ph.D.
with optional emphases in:
Cognitive Science
Human Development
Language, Interaction and Social Organizations
Marine Science ..... M.S., Ph.D.
Mathematics ..... M.A., Ph.D.
Media Arts and Technology ..... M.A.
with emphases in:
Electronic Music and Sound Design
Visual and Spatial Arts
Molecular, Cellular, and Developmental Biology ..... M.A., Ph.D.
Music ..... M.A., Ph.D.
with emphases in:
Composition
Ethnomusicology
Musicology
Theory
Music ..... M.M., D.M.A.
with emphases in:
Piano Accompanying (M.M. only)
Woodwinds and Brass (M.M. only)
Conducting
Keyboard
Strings
Voice
Philosophy ..... M.A.,* Ph.D.
Physics ..... M.A.,* Ph.D.
Political Science ..... M.A., Ph.D.
with optional emphasis in:
Quantitative Methods in the Social Sciences
Portuguese ..... M.A.
see also Hispanic Languages and Literatures
Psychology ..... M.A.
Psychology ..... Ph.D.
with optional emphases in:
Cognitive Science
Human Development
Quantitative Methods in the Social Sciences
Religious Studies ..... M.A.
Religious Studies ..... Ph.D.
with optional emphasis in:
Women's Studies
Sociology ..... M.A.*
Sociology ..... Ph.D.
with optional emphases in:
Human Development
Language, Interaction, and Social Organizations
Quantitative Methods in the Social Sciences
Women's Studies
Spanish ..... M.A.
with specializations in:
Language and Culture
Linguistics
Spanish Literature
see also Hispanic Languages and Literatures
Spanish and Portuguese ..... M.A.
with optional emphasis in:
Romance Linguistics
see also Hispanic Languages and Literatures
Speech and Hearing Sciences ..... M.A., Ph.D.
(closed to new admissions)
Statistics ..... M.A.
Statistics and Applied Probability ... Ph.D
with optional emphasis in:
Quantitative Methods in the Social Sciences

Donald Bren School of Environmental Science & Management

Master of Environmental Science and Management ..... M.E.S.M.
Environmental Science and Management ..... Ph.D.

Graduate School of Education

Degrees

Counseling Psychology ..... M.A.*
Counseling/Clinical/School Psychology ..... Ph.D.
with emphases in:
Clinical Psychology
Counseling Psychology
School Psychology
Education ..... M.A., Ph.D.
with emphases in:
Cultural Perspectives of Education
Child and Adolescent Development
Educational Leadership and Organizations
Research Methodology
Special Education, Disabilities and Risk Studies
Teaching and Learning
with optional emphases in:
Cognitive Science
Human Development
Language, Interaction and Social Organizations
Quantitative Methods in the Social Sciences
Education ..... M.Ed.
with emphases in:
School Psychology
Teaching *(must be combined with MST or SST credential)*

Teaching Credentials

Multiple Subject (Elementary)
with optional emphasis in either:
Bilingual/Crosscultural Language and Academic Development (Spanish)
Crosscultural Language and Academic Development
Single Subject (Secondary)
with optional emphasis in either:
Bilingual/Crosscultural Language and Academic Development (Spanish)
Crosscultural Language and Academic Development

Service Credentials

Pupil Personnel Services with specialization in School Psychology
Preliminary Administrative Services
Professional Administrative Services

* Students are not admitted to work for the master's only in this field, although it may be awarded to students pursuing work toward the Ph.D. after fulfillment of the appropriate master's degree requirements.

Additional Academic Programs

UCSB Washington Center Program

The UCSB Washington Center Program supports and supervises undergraduate students who pursue internships, research, and creative activities in the nation's capital. The program is open through a competitive application process to upper-division students in all majors. Students may participate during any academic quarter, or during summer, and may earn up to eight units of internship credit (INT 192DC) and four units of independent study credit (1NT 199DC). Students receive credit toward graduation with INT 192DC and INT 199DC, but need consent from their department to apply the units to their major. Students who meet the financial need and other eligibility criteria may apply for a President's Washington Scholarship to help cover supplemental internship costs. A minimum grade-point average of 2.8 is required.

The UCSB Washington Center also offers a unique opportunity for UCSB faculty members and graduate students to teach and pursue research in the Washington D.C. area. UCSB faculty members and graduate students in residence advise interns in conducting research and writing major research papers. UCSB faculty, along with faculty from other participating UC campuses, offer upper-division courses at the Center in diverse academic fields; students may receive credit for any of these courses.

Information is available on-line at: www.ucdc.ucsb.edu, or call the campus office at (805) 893-3090.

Summer Sessions

A six-week summer session is offered each year at UCSB. The Summer Sessions program includes over 350 lower- and upper-division courses ranging from anthropology to writing. Nine-week courses in foreign languages are also offered as well as special study undergraduate courses, and some graduate courses. A few courses are also offered off campus at the UCSB Ventura Center.

Summer Sessions also includes institutes in French and Francophone Studies and Hispanic Languages and Culture. These residential six-week institutes provide master's level training structured for the needs and schedules of high school and college teachers and other working professionals coming from all over the United States and Canada. The program, which can be completed in three intensive summer sessions, is ideal for teachers who cannot pursue their studies during the academic year because of professional obligations.

Four special pre-college programs for high-school students are offered during the summer sessions:

The **UCSB Early Start Program** offers qualified high-school students, who have completed their sophomore year, college-level lower-division academic courses ranging from anthropology to statistics. Students can receive full university credit and will experience college life in a supervised environment.

The **College of Creative Studies Intensive Program** is unique in the UC System. Its purpose is to enrich the intellectual lives of gifted and talented students. College credit may be earned in art, and literature. These courses are designed to instill the desire for advanced and independent work in the student entering grades 9-12.

The **Summer Research Mentorship Program** matches highly motivated high-school students with an active researcher or scholar who serves as faculty advisor and research supervisor. Students earn university credit while gaining research experience.

Summer Sessions **Young Performing Artists Program** offers qualified high school students an opportunity to choose from an exciting schedule of courses in voice, dance, or drama.

Summer Sessions is a self-supporting non-profit unit of UCSB. It is supported by student fees and receives no state funds. The Summer Sessions Catalog, published each spring, contains a full list of courses and information regarding Summer Sessions fees, rules, and regulations. The catalog and application forms for summer session, special institutes, and programs are available from the UCSB Summer Sessions Office, Student Affairs and Administrative Services Building (SAASB) 2214. Telephone: (805) 893-2047. E-mail: info.questions @summersession.ucsb.edu.
Web site: www.summer.ucsb.edu.

Education Abroad Program

The University of California offers international study programs in cooperation with over 120 host universities and colleges in 34 countries throughout the world. More than 2,000 UC students, primarily undergraduates, are expected to take part in this program in 2000-2001. Participating students remain registered on their home campuses while studying abroad and receive full academic credit for their work. Some 900 international students will attend the University of California under the auspices of the Education Abroad Program (EAP) in 2000-2001.

Selection of UC undergraduate students requires the following: well-defined goals and a clear academic plan for integrating EAP studies into the student's UC degree program; a minimum 3.0 cumulative grade-point average at the time of application and maintained through departure (not required for some of the short-term and special-focus programs); personal interview; endorsement by the UCSB EAP Selection Committee; and completion of language and other specific courses as required (with an overall grade point average of 3.0). Many programs require two years of university-level training in the language of the host country.

EAP opportunities are also open to qualified graduate students who have completed at least one full year of graduate work and have support of their academic department and graduate

SUMMARY OF EAP OPPORTUNITIES ABROAD	All/Some Courses in English	Language Prerequisite	Language Study Required*	Sophomore Participation Allowed	Graduate Participation Encouraged**	Applications are due in the months noted below		
						Oct./Nov.	Jan./Feb.	April/May
Armenia: Summer Program in the Caucasus	•			•			•	
Australia: Year Programs	•							•
Fall Semester Marine Science Program	•						•	
Austria: Spring Option following Hungary Fall Program	•	•			•		•	
Barbados: Fall and Year Programs	•				•		•	
Brazil: Spring and Year Programs	•	•					•	
Canada: Fall and Year Programs	•				•		•	
Chile: Spring and Year Programs		•			•			•
China: Fall and Year Programs		•	•		•		•	
Intensive Chinese Summer Program		•	•	•			•	
Costa Rica: Spring and Year Programs		•			•			•
Fall and Spring Tropical Biology Programs	•		•			•		
Denmark: Fall and Year Programs	•		•		•		•	
Summer Intensive Language Program			•	•			•	
Fall and Year Architecture Programs	•						•	
Egypt: Year Program	•		•		•		•	
Year Intensive Arabic Language Study Program		•	•		•		•	
France: Year Programs		•			•		•	
Fall Language and Society Programs		•	•	•			•	
Fall and Year Science and Engineering Programs	•	•	•		•		•	
Germany: Year Programs		•			•		•	
Spring First-Year Language and Society Program			•	•		•		
Spring Second-Year Language and Society Program		•	•	•		•		
Spring Semester for Students with Advanced German		•			•	•		
Ghana: Fall and Year Programs	•						•	
Hong Kong (S.A.R.): Fall and Year Programs	•		•				•	
Fall and Year Business, Engineering, and Science Programs	•						•	
Spring Business, Engineering, and Science Program	•							•
Hungary/Central Europe: Fall and Year Programs	•		•		•		•	
India: Fall Program	•		•		•		•	
Ireland: Year Programs	•					•		
Israel: Fall, Spring, and Year Programs	•		•		•		•	
Fall, Spring, and Year Environmental Studies Programs	•				•		•	
Summer Language Program. Modern Hebrew in Jerusalem			•	•			•	
Italy: General Year Programs		•			•		•	
Fall and Year Architecture Programs		•					•	
Spring Architecture Program		•						•
Fall and Year Business, Economics, and International Studies Programs	•	•	•		•		•	
Spring Business, Economics, and International Studies Program	•	•	•		•			•
Fall and Year Advanced Studies Programs		•			•		•	
Spring Advanced Studies Program		•			•			•
Summer Language and Culture Program			•	•			•	
Fall Language and Culture Program			•	•			•	
Spring Language and Culture Program		•	•		•			
Japan: Year Programs	•	•	•			•		
Spring Global Security and Economic Development Program	•			•		•		
Year Engineering Programs in Japanese		•	•		•	•		
Spring and Year Engineering Programs in English	•		•	•		•		
Year Economics Programs		•	•		•	•		
Fall and Spring Language and Society Programs	•	•	•	•		•		
Korea: Fall and Year Programs	•		•				•	
Fall and Year Graduate Program		•			•		•	
Korean Studies Summer Program	•		•	•			•	

SUMMARY OF EAP OPPORTUNITIES ABROAD	All/Some Courses in English	Language Prerequisite	Language Study Required*	Sophomore Participation Allowed	Graduate Participation Encouraged**	Applications are due in the months noted below		
						Oct./Nov.	Jan./Feb.	April/May
Mexico: Fall and Year Programs		•			•		•	
Winter Language and Society Program		•	•	•				•
Summer Language and Society Program		•	•	•			•	
Fall Field Research Program		•	•	•	•		•	
Spring Field Research Program		•	•	•	•			•
Fall and Year Business and Economics Programs	•		•				•	
Spring Business and Economics Program	•		•					•
Netherlands: Fall and Year Programs	•						•	
Spring Program	•						•	
Fall and Year Economics, Business Administration, and International Studies Program	•						•	
New Zealand: Year Programs	•							•
Russia: Fall Intermediate and Advanced Programs		•	•		•		•	
Singapore: Fall and Year Programs	•						•	
South Africa: Year Programs	•							•
Spain: Year Programs		•			•		•	
Fall Hispanic Studies Program		•	•				•	
Spring Hispanic Studies Program		•	•					•
Fall Language and Society Program		•	•	•			•	
Spring Language and Society Program		•	•	•				•
Sweden: Fall and Year Programs	•		•				•	
Summer Intensive Language Program			•	•			•	
Taiwan: Fall and Year Programs	•	•	•				•	
Turkey: Fall and Year Programs	•		•		•		•	
United Kingdom: Year Programs	•					•		
Vietnam: Fall Language and Area Studies Program	•		•				•	

**Intensive language programs precede the first term of programs where the course work during the fall, spring, or year is not taught in English. Programs identified in this column require language study during the term or year.*

***Graduate study is possible at most EAP sites. This column highlights programs that offer special opportunities for graduate students.*

dean. A detailed statement of the projected program of study is required.

University of California faculty, who serve as directors at many Study Centers, provide academic counsel to students while abroad. Full credit is granted for courses satisfactorily completed, and approved courses are recorded on official UC transcripts. With careful planning, study abroad should not delay progress toward graduation. Application of units earned abroad toward major or college requirements depends upon UC departmental or college criteria.

Participants pay the same fees as at UCSB, as well as room, board, books, and personal travel and living expenses. Additional costs include round-trip transportation and fees for on-site orientation and intensive language programs (where applicable). The cost of studying abroad is often comparable to that of studying on a UC campus, although the costs vary from country to country.

While on EAP, students are eligible for financial assistance. Those already receiving UC financial aid continue to receive grants, loans, and scholarships while abroad. Aid is based on the cost of studying at each EAP location and on individual need. Students not currently receiving UC financial support may qualify for financial aid while on EAP. In addition to UC financial aid, EAP provides support through various scholarships and grants. Campus scholarships may also be available, based on country, academic merit, or academic field of study. Students should contact the Campus EAP and Financial Aid Office for additional information.

The Campus EAP Office is located in South Hall 2431. An advisor there can provide full details about the academic programs abroad, requirements, and application procedures. Staff will put students in touch with recent participants and academic advisors. Academic catalogs and detailed course listings are available. Course listings for each EAP location are also available on-line at www.uoeap.ucsb.edu.

Extended Learning Services

UCSB Extended Learning Services offers innovative education, training, and services that prepare individuals and organizations to meet the lifelong challenge of growth and change.

UCSB Extension

As the continuing education division of UCSB, Extension offers certificate programs, courses, and seminars for personal and professional development on a year-round basis in Santa Barbara, Ventura, San Luis Obispo, and Kern counties. In addition to the certificate programs listed on this page, Extension offers individual courses in art, management, professional education for teachers, health and psychology, test preparation, and many other topics. Courses are open to the general public, including UCSB students. Extension is supported by student fees and receives no state funds.

UCSB Extension Certificate Programs Listing

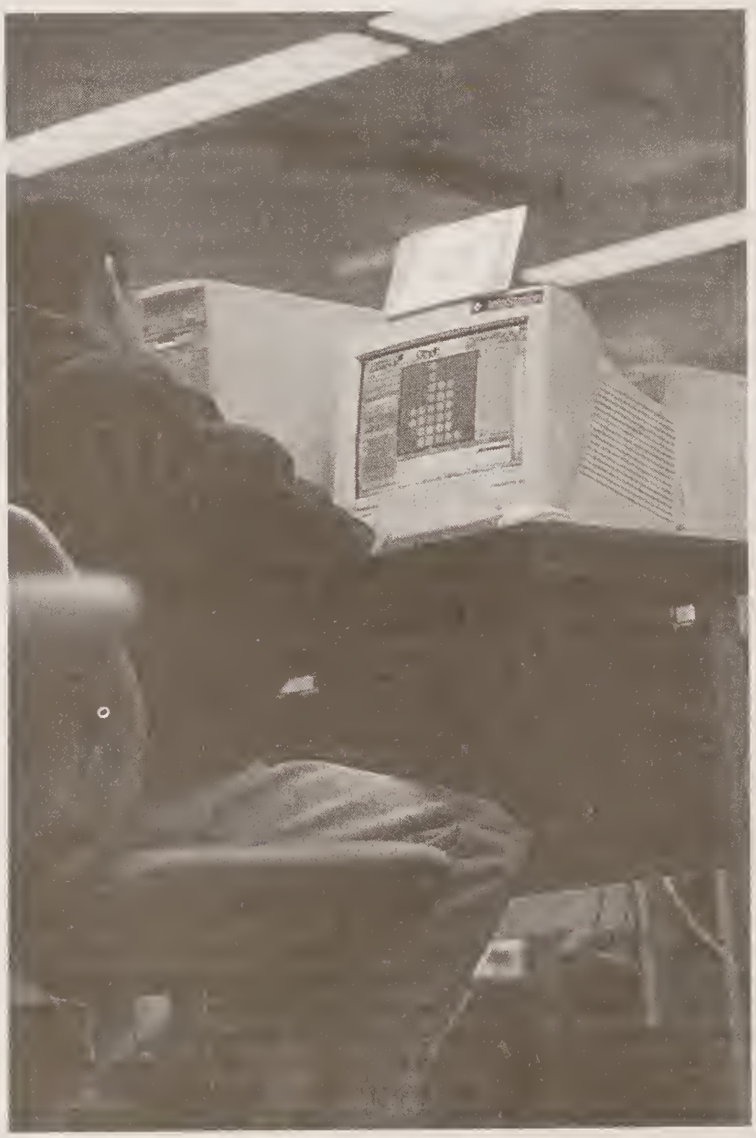
Sequential programs leading to a certificate or professional designation are available in the following fields:

- Accounting
- Alcohol & Other Drug Counseling
- Business Accounting
- CLAD for K-12
- Computer Network Specialist
- Computer Resource Specialist
- Database Management
- E-Commerce Development
- Graphic Design & Visual Communication
- Human Resource Management
- Legal Assistantship
- Marketing
- Negotiation, Mediation & Conflict Management
- New Media Design & Production
- Nonprofit Financial Management
- Object-Oriented Programming
- Office Applications Specialist
- Personal Financial Planning
- Production/Inventory Management
- Project Management
- Supervisory/Management Development
- Teaching English as a Second Language
- UNIX Programming
- WebMaster: Designer & Web Site Manager

Concurrent Enrollment in UCSB Courses Through Extension

The Concurrent Enrollment Program is a cooperative arrangement between the campus and Extension that enables qualified individuals to enroll in undergraduate and graduate courses on a space available basis without being formally admitted to UCSB. Concurrent enrollment is not open to UCSB students who have been academically disqualified from UCSB or who are on reinstatement probation or subject to disqualification. Concurrent enrollment is ideal for those who are considering returning to school, preparing to enter UCSB, seeking to complete a few units to graduate, or desiring to take specific UCSB courses for professional reasons. Upon petition, units earned may be used by matriculated UCSB students to satisfy degree requirements; however, grades are not included in the GPA and coursework does not fulfill academic residency requirements. Participation in concurrent enrollment does not constitute admission to UCSB. Course credits are recorded at Extension.

Additional information about all of UCSB Extension's programs, including Concurrent Enrollment, is available at the main office in the Hollister Research Center, 6550 Hollister Avenue, Goleta, CA 93117, telephone: (805) 893-4200 or on the web site at www.extension.ucsb.edu.



International Programs

UCSB Extension's International Programs division offers a variety of educational programs for international students and professionals who are interested in improving their proficiency in the English language, their understanding of the social and business culture of the U.S., and their knowledge of specific academic subjects. Intensive English study is offered in four- and ten-week formats at different proficiency levels from basic to advanced. The program includes a core course with a wide range of electives allowing students to emphasize academic, communication, and business skills. Students with TOEFL scores of over 530 may participate in individually customized programs consisting of advanced English language study, Extension courses, and concurrent enrollment in UCSB courses. Specialized intensive certificate programs are available in business and management, Teaching English as a Foreign Language (TEFL), Marketing, and Web Technology. All programs can be customized for groups from educational institutions and business organizations. Program information, academic counseling and advising, assistance with immigration, housing, and extracurricular activities are available at the International Programs office, UCSB Storke Center, 320 Storke Road, Goleta, CA 93117. Telephone (805) 893-8383, fax (805) 893-8427. E-mail: intlprog@xlrn.ucsb.edu. Web site: www.ip.ucsb.edu.

Off Campus Studies

Off Campus Studies (OCS) offers an innovative way for working adults and re-entry students to complete their upper-division coursework and earn a bachelor of arts degree in anthropology, English, history, law and society, political science, psychology, sociology, or interdisciplinary studies or earn a master's degree in computer science or computer engineering. Students attend courses on a part- or full-time basis at the UCSB Ventura Center or on the main campus. OCS is the only program of its kind throughout the nine-campus UC system, utilizing both live instruction and interactive distance learning formats for classes. OCS students are fully admitted to the university, pay standard registration and other fees, but receive individual academic counseling and advising from admission through graduation.

Information is available at the OCS Office, 6550 Hollister Avenue, Goleta, CA 93117, telephone (805) 893-4056; or at the UCSB Ventura Center, 3585 Maple Street, Ventura, CA 93003, telephone (805) 644-7261.
Web site: www.ocs.ucsb.edu.

UCSB Ventura Center

With seven classrooms and a Pentium computer lab, the Center provides a Ventura County site for Extension, Off Campus Studies, and Summer Session programs, with day, evening, and weekend classes available. Academic counseling and advising and registration for Off Campus Studies and Extension programs are available. The Center is located at 3585 Maple Street in Ventura. Telephone (805) 644-7261.
Web site: www.xlrn.ucsb.edu.

Aerospace Studies (ROTC)

Air Force ROTC is a college-level program designed to select and train highly qualified men and women to become commissioned Air Force officers. After graduating from college and completing all Air Force ROTC requirements, cadets are commissioned as second lieutenants in the United States Air Force. Typical service is four years; service duration for pilots and navigators is longer. These individuals serve in a broad range of duties from actual flying to engineering to administration and to a host of other fields, depending on the individual's background.

AFROTC offers two different programs, a four-year and a two-year program. To enter AFROTC, an individual must have at least two years of college remaining, which may include graduate study. In addition, the individual must be a U.S. citizen prior to entering the last two years of the program, be able to pass an Air Force medical examination, be of high moral character, and be in good academic standing. Entry into the last two years of the program is on a competitive basis.

The program consists of one Aerospace Studies (ROTC) class and a two-hour per week leadership laboratory each term.

UCSB students can take AFROTC through the host detachment at UCLA. For more information, contact the UCLA Department of Aerospace Studies at (310) 825-1742, visit the detachment website at www.sscnet.ucla.edu/afrotc, or send email to det055@ucla.edu.

Research at UCSB

The Office of Research

The Office of Research is the research arm of UCSB. This office administers approximately 1,592 active contract and grant awards and facilitates more than 1,044 new awards totaling $102.6 million.

The Office of Research is headed by the Vice Chancellor for Research, who is the principal campus officer in matters of research policy and administration, and is an advocate for research and its value in an educational setting. The Office of Research:

- fosters active relationships between the University, government, industry, and the private sector, and provides guidance and leadership for interdisciplinary research initiatives and technology transfer;
- establishes leadership in setting research policy, and developing and implementing a strategic plan for research;
- enhances ways in which the educational and research missions of the University mutually reinforce each other;
- interacts with the Office of the President and other UC campuses regarding research policies, funding, administration, and intercampus research opportunities;
- administers and enables a wide array of campus multidisciplinary research units;
- disseminates information to campus researchers on extramural funding opportunities;
- consults with faculty on locating and soliciting extramural research support;
- solicits, facilitates and accepts grants and contracts for the support of research, training, and public service;
- ensures the administration of awards is in agreement with university and sponsor policies;
- compiles and reports statistical information relating to extramural funding;
- provides matching funds for research and other assistance to individuals and units;
- coordinates and supports mandated regulatory committees, including the Human Subjects Committee, the Conflict of Interest Committee, and the Animal Care Council;
- directs the management of the Sponsored Projects Office, including providing assistance to the Patent Coordinator in matters related to intellectual property, and providing guidance to the Conflict of Interest Coordinator;
- supervises the six Natural Reserve System elements associated with UCSB.

For more information on the Office of Research, please visit our web site at research.ucsb.edu.

National Research Centers

UC Santa Barbara is home to a number of national research centers. All centers offer specialized research opportunities and a multidisciplinary environment for study at the undergraduate, graduate, and postdoctoral levels.

Institute for Theoretical Physics

The National Science Foundation's Institute for Theoretical Physics, initiated in 1979 on the UCSB campus, brings together physicists from all over the world to collaborate on cross-disciplinary problems. Areas of study include elementary particles and nuclei, condensed-matter physics, astrophysics, and cosmology. Approximately 50 researchers are in residence at the institute at any given time. One of the major centers of theoretical physics in the world, the institute is housed in its own unique building near the east entrance to the campus. Telephone: (805) 893-4111. Web site: www.itp.ucsb.edu

Materials Research Laboratory (MRL)

The Materials Research Laboratory at the University of California, Santa Barbara, was established in September, 1992 and currently involves 35 faculty from eight departments plus 60 research students and postdocs. A new 14,000 square foot MRL building houses our central facilities, seminar rooms, research office space and the MRL administration. The scientific activities of the UCSB-MRL are focused around four interdisciplinary research groups (IRGs), as outlined below, together with seed projects, central facilities, an educational outreach program, and a technology outreach program. Web site: www.mrl.ucsb.edu

Complex Fluids (IRG1), Group Leader: Philip Pincus. IRG1, which focuses primarily on the biomolecular materials area, is examining the creation and control of biomolecular materials whose microstructure can be patterned during processing on various length scales which vary from nanometers to submacroscopic:

- DNA-Liposome Complexes.
- Lamellar Biogels.
- Stressed Synaptic Vesicles.
- Polymer-Surfactant Interactions.
- Proton Transport in Drug Delivery.
- Self-Assembly of Catanionic Vesicles.
- STM of Ripple Phase Bilayers.
- Rheology and Morphology of Rod-like Micelles.
- Charge Fluctuation Effects on Biomembranes.
- Effective Interactions in Charged Colloidal Suspensions.

Solution Synthesis of Inorganics at Molecular and Atomic Interfaces (IRG2), Group Leader: Fred Lange. The focus of IRG2 is on the chemical and physical basis of the low temperature synthesis of materials from solutions using either molecular or atomic interfaces. The research aims to understand the basic mechanisms of these processes and to explore the synthesis of new materials with applications in electro-optics, catalysis/gas separation, and biotechnology:

- Biological processes where genetically synthesized proteins adsorb to crystalline surfaces to direct the growth, morphology and composite architecture of shells and siliceous diatoms.
- The formation of inorganic molecular sieves, e.g., zeolites and mesoporous solids, around molecular templates including organic bases and surfactants.
- Epitaxial growth of thin films on single crystal templates under hydrothermal conditions.

Heterogeneous Polymeric Structures (IRG3), Group Leader: Edward Kramer. This IRG concentrates on the science and engineering of multiphase polymeric systems where performance of a material and its applications are intimately connected to the assembly of precise heterogeneous structures. These structures may be spatially periodic, such as those produced by self-assembly in block copolymers, or may possess only short-ranged order, as in foams or interpenetrating networks. We are particularly interested in formulating composite plastic, determining how precise control over the scale and geometry of the heterogeneity can impact performance, and designing new processing strategies to manufacture improved structures. Current projects include:

- Nanocomposites containing conjugated polymers for polymer LEDs and lasers.
- Mesoporous organic-inorganic hybrid materials via block copolymer templating for photovoltaic and optoelectronic sensors.
- Precision ceramic foams via pre-ceramic polymers.
- Novel block copolymers for biomedical applications.
- Heterogeneous structures of dissimilar polymers via reactive blending processes.

Strongly Nonequilibrium Phenomena in Complex Materials (IRG4), Group Leader: James Langer. This IRG has a strong theoretical component, but includes several experimental projects. It is firmly focused on important materials phenomena that share the common themes of nonlinearity and strong departures from mechanical and thermal equilibrium:

- Slipping, adhesion and fracture in polymeric systems.
- Rheology and structural transitions in complex fluids.
- Friction, from atomic scales to earthquake faults.
- Deformation and fracture of amorphous solids.

National Nanofabrication Users Network (Nanotech at UCSB)

Nanotech is the UCSB branch of the National Science Foundation's National Nanofabrication Users Network (NNUN). The goal of the NNUN is to provide a geographically and technologically extensive capability to facilitate research breakthroughs across a broad spectrum of fields, including physics, electronics, optoelectronics, biology, and mechanics. Nanotech, with the resources of a 3500 square-foot clean room, including a Class 100 optical lithography capability, electron beam lithography, and a full range of fabrication processes, can leverage the fabrication expertise developed through work at UCSB and make it available to a broader community, receiving in turn, a large diversity of fabrication challenges and applications.
Web site: www.nanotech.ucsb.edu.

National Center for Ecological Analysis and Synthesis (NCEAS)

The National Center for Ecological Analysis and Synthesis (NCEAS) was established by the National Science Foundation with additional support from the State of California and UCSB. The Center sponsors group activities, sabbatical fellows, and postdoctoral associates focusing on the integration of existing ecological information. NCEAS also is involved in the development of informatics activities that serve the ecological community.

The Center provides facilities, services, and high performance computing capabilities for visiting scientists. Recent research topics have included ecological economics, restoration ecology, variability in community dynamics, complex population dynamics, new directions for ecosystem science in the private sector, global changes and terrestrial ecosystems, deep sea biodiversity, and an analysis of the relationship between productivity and diversity.

The Center maintains contacts with a variety of campus entities through collaborative efforts and the involvement of faculty from several departments. Graduate and undergraduate interns are also supported.

In addition to ecological research, the Center supports outreach activities, and is developing programs to involve K-12 education activities. Information about the Center is available online at www.nceas.ucsb.edu.

Optoelectronics Technology Center (OTC)

The Optoelectronics Technology Center (OTC) at Santa Barbara is the lead member of a multicampus university research consortium-The Heterogeneous Optoelectronics Technology Center (HOTC)-which was established in 1997 after a national competition by the Defense Advanced Research Projects Agency (DARPA). HOTC is composed of investigators from UCSB, Cornell, UCSD, UCLA, USC, and UT-Austin who are teamed to provide advanced capabilities for real-time information access systems. A main aspect of the Center's charter is to encourage collaboration between academia and U.S. industry in order to accelerate the realization of practical, manufacturable technologies in the area of optical interconnects and memory.

As a part of this consortium, OTC at Santa Barbara concentrates on the formation of advanced vertical-cavity laser and photodetector arrays as well as their combination with integrated circuits using new heterogeneous integration technologies. This technology should provide new device and materials capabilities for the next generation of parallel computer interconnects and data communications.
Web site: www.ece.ucsb.edu/OTC.

Southern California Earthquake Center

The Southern California Earthquake Center (SCEC) is a National Science Foundation Science and Technology Center established in 1991. It is a cooperative effort among the University of Southern California, California Institute of Technology, San Diego State University, University of California at Los Angeles, University of California at Santa Barbara, University of California at San Diego, University of Nevada at Reno, and the United States Geological Survey. USC is the coordinating institution, and Professor Tom Henyey of USC is the Center Director. The mission of the SCEC is to integrate research results into a tectonic master model of southern California and transfer this technology to other seismically active areas. The primary objectives of the Center are to estimate earthquake potential in southern California, to quantify the likely ground shaking from future earthquakes, and to communicate knowledge of earthquake science to decision-makers and the public.
Web site: www.scec.org.

Organized Research Units

Organized research units (ORUs) provide unusual opportunities for students and faculty to do basic and applied research in a variety of disciplines. The following ORUs operate outside of the established academic teaching departments at UCSB.

Note: Neither courses of instruction nor degree programs are offered through the organized research units. Additional information about the units is available from the Office of Research, Cheadle Hall 3227. Telephone: (805) 893-4188.

Center for Chicano Studies

The Center for Chicano Studies supports and conducts interdisciplinary basic and applied research on the history, culture, and socioeconomic status of Chicanos/Latinos in the United States. Researchers from the social and behavioral sciences, humanities, and education engage a wide range of contemporary and historical social issues including identifying key barriers to employment, recovering systems of cultural production, examining community empowerment, analyzing immigration and settlement, oral traditions and legal disclosure. Each year the Center sponsors faculty work groups, collaborative research projects, lectures, symposia, and publications that reflect this set of concerns.

Developing research initiatives that strengthen the recruitment and retention of faculty, graduate students, and undergraduates involved in Chicana/o and Latina/o Studies are priorities. The Center, along with the Department of Chicano Studies, supports the unique and prestigious Luis Leal Endowed Chair in Chicano Studies. In addition, each year the Center recruits and supports a Visiting Research Scholar involved in cutting-edge research in Chicana/o Studies. Moreover, the Undergraduate Student

Internship Program enhances the research skills of undergraduates interested in Chicana/o and Latina/o Studies by providing stipends to work on faculty projects.

As the only organized research unit devoted to the study of Chicana/o and Latina/o populations, the Center is a resource to local community agencies, community leaders, state and national entities as well as to the local campus community. Thus, public service forms an integral part of the Center's educational mission. Web site: omni.ucsb.edu/ces.

Institute for Computational Earth Systems Science (ICESS)

The Institute for Computational Earth System Science (ICESS) provides an environment in which Earth system scientists can closely collaborate and perform computations not possible in many other research facilities. The focus is on research and research education in Earth system science, with an emphasis on processes governing the interactions of radiation and Earth.

Advances during the past decade in computer and satellite technology, and its ability to model complex systems, have opened unprecedented opportunities to increase understanding of the Earth as an integrated system. ICESS is on the leading edge of Earth system science research and related computer and data processing technology. It is uniquely positioned to utilize the extensive satellite capabilities that have started to come on-line from a variety of agencies and organizations. Currently there are few research/instructional units in the country, or indeed the world, with comparable research programs in computational Earth system science.

The ICESS field of research spans the globe and provides unique research opportunities to both undergraduate and graduate students. The facilities consist of state-of-the-art computing resources, an optical calibration laboratory, an electronics laboratory, a satellite receiver dish, a Seaspace TeraScan data acquisition and image processing system, a Bausch & Lomb UV Radiometer with access to nationwide UV data, comprehensive climate radiation data, and a variety of unique field equipment. The satellite receiver is used for the real-time acquisition of satellite data. This capability, in concert with the advanced networking facilities, makes current and historical satellite imagery electronically accessible at UCSB for both research and instruction.

As an Organized Research Unit the ICESS mission is to provide: a distributed, interdisciplinary computer environment for the promotion and support of research and research education in Earth system science; an interdisciplinary environment and computer-related services that enhance the excellence and competitive advantage of UCSB global change research; a center of excellence to provide visibility and aid in the attraction of top faculty and students to UCSB; and efficiently-run business operations and administration that support research. Web site: www.icess.ucsb.edu.

Institute for Crustal Studies

The purpose of the Institute for Crustal Studies is to increase the understanding of the earth's crust and lithosphere, including the portions below the sea floor. New technical approaches to issues involving the earth's crust are being explored through collaborative research projects between the university, government, and industry. The research agenda of Crustal Studies includes tectonics, crustal structure and materials, earthquakes, and hazardous waste disposal. The research activities of the institute include faculty and students from the departments of biological sciences, engineering, geography, geological sciences, mathematics, and physics, and the environmental studies program.

Information about the Institute is available online at www.crustal.ucsb.edu.

Institute for Social, Behavioral, and Economic Research (ISBER)

The Institute for Social, Behavioral, and Economic Research (ISBER) conducts interdisciplinary basic and policy research, and offers research development support, on a wide spectrum of problems. ISBER provides an active program of research development in the social sciences and related areas. Investigators are from the social and behavioral sciences, the humanities and those sciences involved with environmental issues. Areas investigated range from the globalization of industry, archaeology in the Americas, how health care data are acquired and used in research, the economics of criminal justice and the linguistics of almost extinct modern languages, to the sociology of religion. A number of centers have been established to focus on specific areas of interest. These include the Center for Global Studies, East Asia Center, Center for Communication and Social Policy, Health Data Research Facility, Center for Advanced Study of Individual Differences, Center for Evolutionary Psychology, Center for the Study of Religion, Center for the Study of Discourse, Center for the Study of Sexual Minorities in the Military, and the MesoAmerican Research Center. One of ISBER's principle objectives is to promote research which is focused on global issues. Web site: www.isber.ucsb.edu.

Marine Science Institute (MSI)

The Marine Science Institute (MSI) ranks internationally as a leader in ocean research. MSI supports research projects involving faculty, students, and researchers spanning 14 academic disciplines. Much of MSI's impact arises from the unusual interdisciplinary research that the Institute fosters. Ecology mingles with geography, physics with geology, and chemistry with oceanography to expand our understanding of the ocean world. In addition, MSI takes a broad view of ocean science, looking at interconnections between ocean, freshwater, and terrestrial ecosystems. MSI's faculty and professional researchers stand at the forefront of their fields, regularly redefining our current knowledge of marine science and policy.

The UCSB campus is situated on a promontory overlooking the Pacific Ocean, one of only a handful of universities worldwide located directly on the coast. Surrounded by a rich diversity of coastal habitats, MSI serves as the focal point for ocean-related programs on this unique campus and offers unparalleled opportunities for undergraduate and graduate education. MSI consists of four centers of research activity: the Coastal Research Center, the Marine Biotechnology Center, the National Center for Ecological Analysis and Synthesis, the Ocean and Coastal Policy Center. In addition, MSI hosts two Long Term Ecological Research programs, one in Antarctica and the other examining linkages between coastal watersheds and kelp forests in the Santa Barbara Channel. MSI is also the regional headquarters for the management of six University of California Reserve System reserve sites, which serve as natural laboratories for field research and teaching.

Information about the Institute is available online at www.msi.ucsb.edu.

Neuroscience Research Institute (NRI)

The Neuroscience Research Institute (NRI) is concerned with understanding the cellular and molecular principles underlying function of the nervous system. Its primary purpose is to further basic research of an interdisciplinary nature in cellular and molecular neuroscience.

Areas of emphasis include research on vision, neurotrophic molecules and their receptors, the physiology and molecular organization of ion channels, neural development, the response of the central nervous system to injury, neurodegeneration and associated disorders, regenerative capacity of the nervous system, synaptic transmission, and neuropharmacology. The academic disciplines involved include cell biology, molecular biology, biochemistry, physiology, genetics, developmental biology, biopsychology, biophysics, and bioengineering. Two centers have been established within the NRI to focus specific problems : the Center for the Study of Age-related Macular Degeneration, and the Center for Neurodegenerative Disorders. For more information on the NRI or its centers, visit our web site at lifesci.ucsb.edu/nriweb.

Quantum Institute

The Quantum Institute is an interdisciplinary research unit that facilitates research in the fundamental properties of complex systems—systems as diverse as superfluid helium, liquid crystals, magnetic nanostructures and semiconductor superlattice and quantum wells. The Institute embraces the Center for Terahertz Science and Technology (CTST), the Center for Spintronics and Quantum Computation (CSQC), and the Center for Nonlinear Sciences (CNLS). CTST offers opportunities for research in the biological, chemical, physical, and material sciences, using the unique properties of the UCSB free-electron lasers. CSQC explores fundamental scientific issues important for future quantum computation in solids. CNLS promotes interactions between researchers who share common interest in nonlinear problems and supports undergraduate and graduate education in the nonlinear sciences. For more information on the Quantum Institute please visit its web site at www.qi.ucsb.edu.

Multicampus Research

UC Linguistic Minority Research Institute (UC LMRI)

The UC Linguistic Minority Research Institute (UC LMRI) is a Multicampus Research Unit of the University of California headquartered at UC Santa Barbara. The Institute involves faculty and projects at all nine UC campuses. The LMRI was established to conduct research on the education of language minority students in the K-12 education sector with the long-range goal of improving these students' access to college. An emphasis is placed on collaborative research with schools and school systems. The major activities of the LMRI include sponsoring research projects; collaborating with schools and educational agencies; conducting annual meetings, research conferences, institutes, and lectures; disseminating information on language minorities in various ways including a monthly newsletter, book publications, and an on-line information server with web services; and sponsoring professional development activities, which include coordinating a pre-doctoral fellowship program at UC campuses and hosting visiting scholars from all campuses in the UC system. The Institute is housed in Building 528, Room 4722. Telephone: (805) 893-2250. Facsimile: (805) 893-8673. E-mail: lmri@lmrinet.ucsb.edu. Web site: lmrinet.gse.ucsb.edu.

Affiliated Units

Center for Black Studies

The Center for Black Studies conducts research on the social, historical, political, economic, and cultural meanings that have affected peoples of African heritage throughout the world. The center sponsors a faculty development program (dissertation fellows); supports and disseminates faculty research; organizes and presents seminars, lectures, and symposia; and serves as a liaison between the campus and the Santa Barbara community. Web site: omni.ucsb.edu/cbs.

Engineering Research Centers

For information, see the chapter titled "College of Engineering."

Interdisciplinary Humanities Center

The Interdisciplinary Humanities Center was established in 1987 as part of the University of California's initiative to encourage humanities education and research in the university curriculum. The center promotes innovative forms of collaborative research and teaching, including projects that overlap traditional disciplines. Participants at the center include UCSB faculty and students, as well as distinguished visiting scholars from around the world. The Center invites members of the Santa Barbara community to participate in its conferences and lectures. It also hosts a monthly symposium in which members of the UCSB public engage in discussion with distinguished members of the UCSB faculty. The Center is housed on the sixth floor of the Humanities and Social Sciences Building. Telephone: (805) 893-3907. Facsimile: (805) 893-4336. Web site: www.ihc.ucsb.edu.

Natural Reserve System

The University of California Natural Reserve System (NRS) was founded in 1965 to establish and maintain significant examples of California's diverse aquatic and terrestrial ecosystems for university-level teaching, research, and public service. In addition, many of these sites act as bases for research in nearby natural areas and provide database, housing, and experimental facilities. The thirty-three reserves in the system are open to all qualified individuals and institutions for scholarly work in disciplines ranging from geology and environmental sciences to anthropology and art.

For more information on the NRS, contact the NRS campus office at 805-893-4127, or email donnam@msi.ucsb.edu, or visit the web site at nrs.ucop.edu.

The Santa Barbara campus administers six reserves: Carpinteria Salt Marsh Reserve, Coal Oil Point Reserve, Santa Cruz Island Reserve, Sedgwick Reserve, Sierra Nevada Aquatic Research Laboratory (SNARL) and Valentine Camp.

Undergraduate Research

Faculty in all colleges at UC Santa Barbara encourage students to work with them on research projects in their area of interest. A variety of scholarships and fellowships assist students in carrying out their research. For detailed information, see the appropriate college office.

Materials Research Laboratory Educational Outreach Program

Director: Dr. Fiona Goodchild

Materials Research Laboratory (MRL) initiates projects to improve science education through:

- Lab internship opportunities for community college and UCSB undergraduates
- Collaborative K-12 initiatives with local teachers and administrators

Undergraduate Research
Coordinator: Dr. Dotti Pak

City College Interns in Materials Research (CCIMR)
Approximately 10 students and 2 faculty from Santa Barbara City College participate in MRL research projects for 8 weeks each summer.

Research Interns in Science and Engineering (RISE)
Approximately 20 students from UCSB and other institutions work on research projects with MRL faculty and other UCSB researchers in summer and academic year internships.

Research Experience for Teachers
Coordinator: Dr. Fiona Goodchild

Research Experience for Teachers (RET)
MRL sponsors research experience for science teachers who spend six weeks during the summer working in research groups led by MRL researchers. The teachers also meet throughout the academic year to design ways of translating this research experience into classroom science curriculum.

Academic Policies and Procedures

Academic policies and procedures described in this chapter apply to all students enrolled at UCSB. They include procedures related to enrollment and attendance, examinations, course credit, the grading system, graduation, and student conduct and responsibility.

Additional academic requirements appear in the chapters "Undergraduate Education at UCSB" and "Graduate Education at UCSB."

Additional information on certain policies and procedures can be found in the Appendix.

Enrollment

Each quarter every UCSB student must register in courses and pay fees and any other outstanding financial obligations, and each step must be completed at a specific time. Students use the Registration by Telephone system (RBT) to enroll. Details of the registration procedure are included in the quarterly *Schedule of Classes.*

When students are admitted to UCSB, their admission is provisional and contingent upon receipt of final official transcripts that verify information supplied in the admission application. Students who fail to provide the Office of Admissions with final transcripts, as well as students whose transcripts fail to verify information supplied in the admission application, may have their admission revoked. Admission may be revoked even if students have enrolled in, attended, and completed classes at UCSB.

The failure of a student to complete the steps involved in enrollment by the specified deadlines will constitute presumptive evidence that the student has withdrawn from the university. A student who wishes to resume study will be required to file an application for readmission and pay the associated nonrefundable fee.

Undergraduate students who are subject to academic disqualification may not officially enroll until and unless they are reinstated on academic probation by the dean or provost of their college or school. Students with outstanding financial obligations to the university have not completed enrollment until their financial obligations have been met or they have enrolled in an Office of Billing, Accounts Receivable, and Collections (BARC) payment plan.

Enrollment Limits

Undergraduates. For undergraduates, the average academic study load is 15 units a quarter; the minimum full-time study load is 12 units. Undergraduate students who are not able to carry at least 12 units a quarter must petition to register in a deficit program (or part-time status) at the time of registration. Students in the College of Letters and Science and the College of Creative Studies may petition for permanent approval of deficit programs. Under certain conditions, reduced fees may be available through the Office of Student Life for undergraduate students who have advance permission to carry 10 or fewer units a quarter.

Warning: Financial aid students who receive a Pell Grant, a Cal Grant A, or a Cal Grant B will have these grants reduced if they receive a fee refund as a result of their deficit load program. In most cases, the financial aid reduction will exceed the fee refund; thus, it is highly recommended that Pell Grant and Cal Grant recipients consult with the Financial Aid Office prior to applying for a deficit load. Students who are approved for a permanent deficit load automatically receive the fee refund and do not have the opportunity to decline it. Students who are on a deficit load program for only one quarter can choose whether to apply for the fee refund.

The maximum number of units allowable for undergraduates each quarter varies among the three colleges; these limits are indicated in the college publications and the *Schedule of Classes.* Students who wish to enroll in more than the maximum number of allowable units must petition for an excess program at the time of registration.

Graduate students. Continuous registration is required of all graduate students. Although the *normal* courseload for graduate students is 12 units per quarter, they *must* register for at least 8 units per quarter to be eligible for many campus and extramural benefits and services—i.e., to be appointed as graduate student researchers or as teaching assistants, to receive many forms of financial aid, and to qualify for student housing. There are no reduced fees for graduate students registering for less than 12 units.

Except as authorized by their departments, graduate students should not enroll in more than 12 units of strictly graduate work—i.e., courses numbered in the 200s and/or 400s—or in more than 16 units of upper-division coursework, or in a combination of upper-division and graduate coursework which exceeds these maximums.

Changes in course enrollment. After registration, changes in course enrollment for all students can be made only with necessary approvals and no later than the deadlines published in the *Schedule of Classes* for that quarter. Such changes include dropping or adding courses and changing grading options. Unapproved withdrawal from or neglect of a course in which a student has enrolled will result in a failing grade.

Medical Evaluation Requirement

New and returning undergraduates who have not been officially enrolled on the UCSB campus for a year or longer are requested to submit a complete record of immunizations and insurance coverage to Student Health.

Examinations. The university recommends that students have a physical examination by a practitioner within one year prior to the first day of classes at UCSB. Physicals are required for all intercollegiate athletes and must be completed at Student Health. Measles, mumps, rubella, and all other childhood immunizations should be completed and up-to-date prior to entering the university. TB skin tests are required for those admitted to the UCSB teaching credential program and for those identified as international students by their Visa status. Tests may be obtained at Student Health for a fee.

AIDS/HIV infection. It is university policy to base admissions on academic criteria, not medical information. Students with AIDS or HIV infection are encouraged to apply for admission and, if accepted, should attend classes and participate in all aspects of campus life. Whenever possible, reasonable accommodations will be made for students with HIV infection. Information and counseling services concerning AIDS may be obtained at Student Health or by calling (805) 893-3434.

Hepatitis B. A new state law requires the Hepatitis B vaccination series be complete by the time of enrollment if you are 18 years of age or younger. The vaccination series requires three injections over a period of six months. If you have not already completed the full series, it is important that you see your local health care provider now to complete this requirement.

Absence and Withdrawal

Temporary absence during a quarter. Students enrolled at UCSB who have been or will be absent from classes for a brief period of time for reasons beyond their control should notify the Office of Student Life. Regardless of the reasons for absence, students will be required to complete all coursework.

If an absence is late in the term and prolonged, making it impossible to complete the coursework on time, a student may petition the instructor to assign an Incomplete (I) grade. To receive an I grade, the student must submit the approved petition to the Office of the Registrar by the last day of the quarter in which the I grade is to be assigned. Refer to "Incomplete Grades" under the "Grading System" section in this chap-

ter for complete regulations. A student who is unable to make this request personally may ask the Office of Student Life to notify each instructor of the circumstances of the absence and to circulate a petition on the student's behalf. If the instructor agrees that an extension of time for completion of the course is justified and approves the petition, a grade of Incomplete will be assigned.

Complete withdrawal. Once a student pays his/her fees or has enrolled in a BARC payment plan, if he/she wishes to then withdraw for a term without completing the enrollment process, he/she must first submit a petition to the Office of the Registrar.

An enrolled student who wishes to withdraw from the university during a quarter without completing the quarter's work must obtain a Petition for Complete Withdrawal from the Office of the Registrar. If the petition requirements are met and the approval of the college provost or dean is secured, the student's enrollment will be withdrawn without academic penalty. When undergraduate students submit the completed petition after the deadline for course withdrawal for the college in which the student is enrolled, the Office of the Registrar will enter a grade of W for each course in which the student is registered. A student who receives permission to withdraw completely during the early weeks of a quarter may be entitled to a partial refund of fees for that quarter as outlined in the *Schedule of Classes.* Students who receive Title IV Federal aid will be required to return a prorated portion if they withdraw or have their status lapsed before 60% of the quarter has passed. Upon request, the Office of Student Life will process a Petition for Complete Withdrawal for a student who cannot do so personally. If the provost or dean of the college approves the petition, the student's academic record will reflect the process described above.

Students who enroll and subsequently discontinue work during a quarter without an approved petition for withdrawal will receive an F, NP (not passed), or U (unsatisfactory) grade, as appropriate, for each course in which they are enrolled for that quarter. Such students are ineligible for any refund of fees, and their future registration privileges may be curtailed or revoked.

Before withdrawing, students are advised to seek counsel from faculty, departmental, or college advisors, or from Counseling & Career Services so as to consider the full implications of this action. After withdrawal and before future registration, undergraduates must apply for and receive permission to be readmitted. The application deadlines for readmission or reinstatement significantly precede the start of the quarter. The deadlines are published in the *Schedule of Classes.* The opening dates for applying for readmission are noted in the calendar at the beginning of this catalog. Graduate students should contact the Graduate Division.

Withdrawal from a course. To withdraw from a course after the established deadline for the quarter, students must petition for and obtain the approval of the provost or dean of their college. The provost or dean may direct the Office of the Registrar to enter a grade of W, F, NP (not passed), or U (unsatisfactory), as appropriate, on the student's record, or may cancel the student's enrollment. The provost or dean may also stipulate that future enrollment in the same course be subject to approval. Students should be aware that late withdrawals are granted only under exceptional circumstances. Students should not discontinue class attendance on the assumption that the request will be approved.

Lapse of status. Lapse of status is the automatically enforced withdrawal of a student from the university. A student's status may be lapsed (1) for failure to comply with the conditions for admission, (2) for failure to register and enroll in courses by the deadline stated in the *Schedule of Classes,* (3) for failure to settle financial obligations when due or to make satisfactory arrangements with the Billing, Accounts Receivable, Collections Office (BARC) if payment cannot be made, (4) for failure to respond to official university notices (including failure to remove blocks). Students who have had their status lapsed are required to pay a prorated portion of all assessed fees up to the date of such lapse in accordance with the fee refund schedule in the *Schedule of Classes.* Students who have received Title IV federal aid should note that they will be required to return a portion of that aid.

Leaves of absence. Continuous registration is required of all graduate students. Under extraordinary circumstances graduate students may request a leave of absence from the Graduate Division. For further information concerning leaves of absence for graduate students, consult the chapter "Graduate Education at UCSB" or the Graduate Division web site at www.graddiv.ucsb.edu.

Undergraduate Readmission. Undergraduate students who wish to register at UCSB after an absence, or after complete withdrawal, cancellation, or lapse of their registration, must file an application for readmission with the Office of the Registrar. Official transcripts of any work undertaken elsewhere in the interim must be submitted. The opening dates for applying for readmission are noted in the calendar at the beginning of this catalog. The application periods, which are also published in the *Schedule of Classes,* may be closed earlier without notice, pending enrollment restrictions, and never later than the following: second Monday in August for fall quarter, second Monday in November for winter quarter, and second Monday in February for spring quarter.

Undergraduates who were on reinstatement-probation or who were subject to academic disqualification or dismissed by dean's action when they left the university will not be considered for readmission unless they are reinstated by the provost or dean of their college, who may establish the conditions of such reinstatement.

Students who are seeking readmission to the College of Letters and Science after having already completed 155 or more units need the approval of the dean. In some cases, they will be required to submit a Proposed Schedule for Graduation before readmission will be considered. In general, readmission will be approved only for those students whose proposed schedule leads to graduation within 200 total units. As the proposal must be endorsed by the student's major department (and minor department if a minor is planned), students should begin this process several months prior to their intended return.

Graduate Reinstatement. Graduate students who wish to register after a break in registration must petition for reinstatement through the Graduate Division. Reinstatement is not automatic; the student's record will be evaluated against those in the current applicant pool.

Repetition of Courses

Certain courses may be repeated for credit, and are identified in the course descriptions in this catalog. Repetition of any course other than these is subject to certain regulations, which pertain only to courses completed in the University of California, excluding those taken in UC Extension. The regulations are as follows:

1. An undergraduate student may repeat only those courses in which a grade of C-, D+, D, D-, F, or NP was awarded. Such courses may be repeated for letter or passed/not passed grades if the courses are so offered and if the student is eligible for that option. In no case, however, shall an NP grade replace an earlier letter grade in the computation of the grade-point average. A course in which an NP has been received may be repeated on a letter-grade basis if so offered.

2. Undergraduates who wish to repeat a course more than once must obtain the prior approval of their college provost or dean at the time of registration.

3. Degree credit for a course will be given only once, but the grade assigned at each enrollment will be permanently recorded on the student's transcript.

4. In computing the grade-point average of an undergraduate who repeats courses in which grades of C-, D+, D, D-, or F were received, only the most recently earned grade and grade points in each course will be used for the first 16 units repeated (unless the new grade is NP). Second attempts of W graded courses will not be added to this repeat total. In the case of repetitions beyond the 16 units, both initial and repeated grades will be used in the computation of the grade-point average. All grades, however, remain a part of the student's permanent record.

5. Undergraduate students who plan to repeat a UCSB course at another UC campus, or vice versa, must petition the provost or dean of their college to establish the equivalency of the courses prior to the intended repetition.

6. Undergraduate students must indicate repeats at the time of registration and when adding courses to their study load.

7. Since many graduate courses are routinely repeated for credit, graduate students must consult the Graduate Division and their academic department if they wish to repeat a class for the purpose of substituting the second grade for the first.

Additional Enrollment Opportunities

Concurrent enrollment. Students who wish to enroll simultaneously in undergraduate courses at UCSB and at another college-level institution must obtain prior approval from the provost or dean of their college. Normally, such enrollment is approved only for courses that are not available in the curriculum at UCSB. Graduate students may enroll at another college-level institution while pursuing a graduate degree at UCSB without the approval of the Dean of the Graduate Division. See the section titled "Transfer of Credit" in the chapter "Graduate Education at UCSB" for information on the rules governing transfer of credit at UCSB.

Simultaneous enrollment by undergraduates in two colleges or schools at UCSB, such as Engineering and Letters and Science or Creative Studies and Letters and Science, is also subject to the approval of the provost or deans of the colleges or schools involved. Graduate students may enroll in courses in two or more colleges or schools at UCSB without the approval of the Dean of the Graduate Division.

Enrollment in UC Extension courses. A student who wishes to complete courses through UC Extension must obtain prior approval by petition to the provost or dean of the student's college. Extension courses are not included in determining grade-point averages and do not apply toward academic residence requirements. UC Extension courses in the X1-X199 series may be counted toward undergraduate degrees upon petition. Degree credit is not given for Extension courses in the X300, X400, and X800 series.

Undergraduates are not eligible to complete courses by concurrent enrollment through UC Extension if they were subject to disqualification or dismissed from the university at the end of their last regular quarter at UCSB.

Extension courses may apply to graduate degrees only if approved by the Graduate Council. Extension courses other than courses taken through concurrent enrollment may apply to graduate degrees only with the prior approval of the Graduate Division and the academic department. See the section titled "Transfer of Credit" in the chapter "Graduate Education at UCSB" for information on the rules governing the transfer of credit from UC Extension.

Examinations

Final examinations

Final examinations are required in all undergraduate courses. The official dates and times of all final examinations are published in the *Schedule of Classes.* No instructor is authorized to change these times without prior approval of the Committee on Undergraduate Courses, and students are responsible for arranging their programs so that their final examinations will not conflict. Normally, examinations will be written, and a maximum time period for their completion will be announced in advance. No student will be permitted to exceed this maximum. The maximum time for a final in a non-laboratory course is three hours. Individual exceptions from finals are not permitted except in the case of comprehensive examinations.

Comprehensive examinations

At the end of a quarter in which an undergraduate student expects to graduate, the major department may (1) examine the student's competency in the major field, (2) exempt the student from final examinations in courses offered by the department during that quarter, and (3) with the approval of the Committee on Undergraduate Courses, assign a credit value to such a comprehensive examination.

Credit by Examination

Students currently registered in any regular term who by reason of advance preparation believe themselves to be adequately grounded in the materials and principles of a given course may petition for credit by examination for any course offered at UCSB, or in any other subject appropriate for inclusion in a University curriculum. If credit is sought in a course not regularly offered at UCSB, the petition must be approved by the Committee on Undergraduate Courses.

Because of the nature of graduate degree requirements, the credit by examination option is not normally used by graduate students. Under no circumstances can a graduate course be completed through the credit by examination option. Questions may be directed to the Graduate Division.

Students may elect, at the time their petition is initiated, to take the examination on the Passed/Not Passed basis, provided they are eligible for enrollment in a course on that basis during that term and P/NP grading is offered for the course, and they will be assigned the grade they earned in the examination. Failure to pass the examination will be recorded as an F, NP, or U, whichever is appropriate, in the student's record.

Certain courses, by reason of special features of the instruction, such as extensive laboratory work, may not be considered appropriate for obtaining credit by examination. In addition, credit by examination will not be approved in the following circumstances: (1) if the student has had prior instruction in the topic (including during high school), (2) for the purpose of repeating a course, (3) for courses in subjects in which the student has completed more advanced work, (4) for elementary and intermediate courses in a student's native language, or (5) for granting credit for a course which the student has attended or audited. All petitions for credit by examination must be approved by the dean of the appropriate college in advance of the date of the examination. Accordingly, each petition for credit by examination must be submitted to the dean at least three weeks prior to the examination. Ordinarily, credit by examination is limited to 12 units.

Auditing Courses

During the regular academic year, students may audit a course (sit in unofficially) with the permission of the instructor. During summer session there are more formal procedures to follow, as described in the *Summer Sessions* catalog. Auditors are not expected to do assignments, take examinations, or participate in classroom discussion, and no record of the audited class appears on the student's quarter schedule or UCSB transcript. Students will not be permitted to earn credit by examination in courses which they have audited.

Dead Week

"Dead Week" is the week prior to final examinations. The purpose of dead week is to allow students time to begin preparation for final examinations without academic obligations beyond the normal class meetings. The giving of any examinations is, therefore, strongly discouraged, especially giving two examinations in

the same course within the time span of dead week and finals week.

Further, the scheduling during dead week, by faculty or departments, of non-instructional events for which student participation is mandatory, is equally strongly discouraged.

Units of Credit

Credit for academic work at UCSB is expressed in units. Generally, the value assigned to a course is determined at the rate of 1 unit for every 3 hours of student work required each week during a 10-week term. The unit value assigned to a course is determined by the number of class meetings each week and by the student's class preparation time.

Class Level

Undergraduate class level is determined by the number of units completed, as follows:

	Units Required
Freshman	0.0 - 39.9
Sophomore	40.0 - 83.9
Junior	84.0 - 134.9
Senior	135.0 or more

Grading System

The following grades are used to report on the work of UCSB students:

Undergrad. Courses		Graduate Courses	
A	(excellent)	A	(excellent)
B	(good)	B	(good)
C	(adequate)	C	(adequate)
D	(barely passing)	D	(barely passing)
F	(not passing)	F	(not passing)
P	(passed)	S	(satisfactory)
NP	(not passed)	U	(unsatisfactory)
I	(incomplete)	I	(incomplete)
IP	(in progress)	IP	(in progress)
W	(withdrawal; undergraduate students only)	W	(withdrawal; undergraduate students only)

The grades A, B, C, and D may be modified by plus (+) or minus (-) suffixes. Grade points for each unit are assigned by the registrar as follows:

A+ = 4.0	A = 4.0	A- = 3.7
B+ = 3.3	B = 3.0	B- = 2.7
C+ = 2.3	C = 2.0	C- = 1.7
D+ = 1.3	D = 1.0	D- = 0.7

F, I, IP, P, NP, S, U and W = 0

Unit credit, but not grade-point credit, is assigned for P and S grades. For a description of the grading system in the College of Creative Studies, see the College of Creative Studies chapter in this catalog.

Incomplete Grades

The grade Incomplete (I) may be assigned when a student's work is of passing quality but is incomplete.

Petitioning process. An Incomplete grade may be placed on a student's record only if the completed Petition for an Incomplete Grade is signed by the instructor and is on file in the Office of the Registrar by the last day of the quarter. In the absence of the petition or of a specific grade other than I, the registrar will record a grade of F, NP, or U. A $5 Incomplete Grade Processing fee is charged to the student's BARC account for each Incomplete grade.

Completion deadline. The student is entitled to have the grade of Incomplete replaced by a passing grade as determined by the instructor concerned, and to receive unit credit and appropriate grade points, upon satisfactory completion of the coursework. Coursework must be completed by the end of the term following the term in which the I grade was reported, whether or not the student is enrolled for the quarter or the course is offered. Unless the work is completed and a grade is reported to the Office of the Registrar by the deadline, the I will be changed automatically to F, NP, or U, as appropriate.

If the instructor is unavailable, the chair of the department in which the course was offered is authorized to supervise completion of the work and to make the appropriate grade change. The instructor and chair also have authority to extend the deadline for completion in the event of unusual circumstances that would clearly impose an unfair hardship on the student if the original deadline were maintained.

An Incomplete grade on the student's record at the time of graduation in a course not necessary for the fulfillment of degree requirements may be removed only up to the end of the fifth week of the term following the date of graduation. An I grade may be removed by the student's submission of completed coursework to the faculty member for the assigning of a new grade. If not removed, the I grade remains an I permanently.

Grade changes to Incomplete. A grade may be changed to an I only with the approval of the provost or dean of the student's college and successful completion of the petitioning process.

Graduate students. Graduate students should consult "Academic Eligibility for Graduate Students" below, for details on the possible ramifications of I grades.

In-Progress Grades

The In-Progress grade (IP) may be assigned provisionally in all but the last term of special courses extending over more than one term. In the last term, the grade assigned by the instructor replaces the provisional IP grades for all prior portions of the course. If a student fails to enroll in or complete the final course of a sequence in the next quarter in which it is offered, the IP grades will be replaced by the grade of I. Further changes of that grade will be subject to the conditions covering Incomplete grades. IP designations are not included in the computation of grade-point averages. Courses graded IP are identified in the *Schedule of Classes.*

Passed/Not Passed Grades

Passed/not passed grades (P/NP) are not included in the computation of university grade-point averages. Courses graded P, however, are acceptable for unit and appropriate degree credit. P grades will be assigned only for coursework equivalent to a C or better on the letter-grade basis. NP grades will be assigned for work equivalent to a C- or below. No credit is given for courses graded NP.

Some undergraduate courses may be offered exclusively on a P/NP basis. These courses are identified in the *Schedule of Classes.* Undergraduate students on academic probation, as well as those in good standing, may take such courses without special approval. Graduate students may take undergraduate courses P/NP with the approval of their graduate advisor, provided the course is offered P/NP.

Undergraduate students may elect the P/NP grading option for courses provided they meet the following conditions:

1. They are in good academic standing (i.e., not on academic probation).

2. The course is open to all qualified students on this basis and is so designated in the *Schedule of Classes.*

3. The course is not required or accepted for the student's major or minor. Courses in the major or minor, whether lower- or upper-division, in or outside of the major department, must be taken for a letter grade. With prior approval of appropriate faculty committees, a department may specify that certain "major" or "minor" courses may be taken P/NP. Courses for which such approval has been granted are identified in the department entries in this catalog.

4. They elect this option at the time of registration or thereafter, but not later than the end of the seventh week of classes. Students are responsible for determining whether they are qualified to enroll in courses on a P/NP basis according to the requirements stated here.

5. At the time of graduation, they will have completed at least 120, or two-thirds, of their units earned in residence at UCSB on a letter-grade basis. There is no limit on the number of courses that may be taken P/NP during a single quarter. The limitation on the number of units taken P/NP does not apply to students who are majoring exclusively in Creative Studies.

6. They have not been restricted or prohibited from the use of the P/NP option due to having earned an excessive number of NP grades. Students with more than 8 units of NP grades in one quarter or with more than 20 units of NP grades in all terms of university enrollment combined may be so restricted. In the case of

repeated courses in which the initial grade was NP, the original NP will not be included in this 20-unit total.

7. Students who take courses in their major department in excess of minimum major or minor requirements may elect the P/NP option for those courses.

Satisfactory/Unsatisfactory Grades

Graduate students may take graduate courses on a satisfactory/unsatisfactory (S/U) basis provided the course is so offered and their graduate advisor approves (Courses numbered 200-599 are eligible to be graded S/U, while courses numbered 1-199 are eligible to be graded P/NP.) S grades will be assigned for coursework equivalent to a B or better on the letter-grade basis. U grades will be assigned for work equivalent to a B- or below. In some departments, classes required for the degree must be taken for letter grades. Students electing the S/U grading option should discuss this issue with their graduate advisor.

Withdrawal Grade

For undergraduate students, the W grade will be assigned when a student withdraws from the university or receives permission to drop a course after the period for change of program established by the Executive Committee of the college or school in which the student is enrolled. The W grade will be assigned for each course affected, including graduate courses when an undergraduate student has been approved to enroll in a graduate course and subsequently withdraws. Courses in which a W has been entered on the student's record will be disregarded in determining a student's grade-point average and will not be considered as courses attempted in assessing the student's grade-point average for graduation. W grades are not assigned to graduate students. When graduate students successfully withdraw from a course, it is permanently removed from their transcript.

Grade Changes

All grades except I and IP are final when submitted to the registrar by the instructor in the end-of-term course report, subject to the provisions noted in "Contested Grades" (below). Thereafter, an instructor may report a grade correction only in the case of clerical or procedural error.

An instructor also may change a grade in the quarter following that in which the original grade was received if the basis for the change is found in work previously accomplished in the course as a part of the student's regular participation in class activity. However, such changes must not create inequities to others whose grades remain unaltered. No final grade (except I) may be revised by reexamination or additional coursework, and no letter grade may be changed to or from P/NP. All grades changed to Incomplete must be accompanied by the necessary Incomplete Grade Petition endorsed by the provost or dean of the student's college.

Contested Grades

A student may challenge a grade on grounds that it was based on criteria not directly reflective of coursework. Full appeal procedures and review authorities are described in detail in the Appendix.

Transcript of Record

A record of each student's academic work at UCSB is prepared and retained permanently by the Office of the Registrar. Students should verify their quarterly grades and immediately inform the Office of the Registrar of any discrepancies.

Official transcripts may be ordered from the Office of the Registrar for a charge of $5.00 per copy. Current students (that is, students with an "active" BARC account) may order official transcripts using the GOLD system (now accessible from the UCSB Homepage at www.ucsb.edu) and have the $5.00 fees billed to their BARC account. Transcripts will not be released if you have outstanding financial obligations with the university. All written requests must be accompanied by appropriate payment. Arrangements for mailing transcripts using any mail service other than first class U.S. Mail must be made in advance with the Office of the Registrar. Your signature authorizing the request is required prior to the release of transcripts. Additional information is available on the Office of the Registrar web site at www.registrar.ucsb.edu/transcripts.htm, and on the recorded message at (805) 893-3135.

Transcripts of work completed at any UC Extension, another campus of the university, or at another institution must be requested directly from the campus or institution concerned.

Eligibility

Academic Eligibility for Undergraduates

Academic probation. Undergraduate students in the College of Creative Studies, the College of Engineering, and the College of Letters and Science are placed on academic probation if their cumulative grade-point average in the University of California falls below 2.0 (C average) at the end of
any quarter. While on academic probation, students are under the supervision of the provost or dean of their college. Students on academic probation will be returned to regular academic status if they raise their cumulative average to 2.0 or above by the end of their second quarter on academic probation.

Academic disqualification. Any of the following conditions make undergraduate students in the College of Creative Studies, the College of Engineering, and the College of Letters and Science subject to academic disqualification from further enrollment at UCSB:

1. At the end of any quarter their grade-point average is less than 1.5 for that quarter.

2. Their grade-point average for any quarter falls below 2.0 while they are on academic probation.

3. After two consecutive quarters on academic probation they have not raised their cumulative UC grade-point average to 2.0 or better.

4. While on reinstatement-probation their quarter grade-point average is below 2.2 and their cumulative grade-point average is below 2.0.

Students who are subject to academic disqualification are not eligible to register again at UCSB until and unless they are reinstated on probation by the provost or dean of their college. Students should refer to the college publications for further information concerning academic disqualification.

Reinstatement. Undergraduate students subject to academic disqualification may appeal to the provost or dean of their college for reinstatement on probationary status. The provost or dean will decide if a student may be reinstated and may set conditions for reinstatement. Reinstated students may register at UCSB under the conditions set by their provost or dean and will be subject to the provost's or dean's supervision until they have regained regular academic status.

In order to transfer either from one UC campus to another or from one school or college to another on the same campus, students who are on academic probation or subject to academic disqualification must obtain the approval of the provost or dean of the college or school to which transfer is requested. Upon completion of the

transfer, the student is subject to the supervision of the provost or dean of that college or school.

Academic Eligibility for Graduate Students

Academic standards for graduate students at UCSB are determined by the Graduate Council and by individual academic departments. Students must maintain a cumulative grade-point average of at least 3.0 (B) to remain in good standing in the Graduate Division at UCSB and to be awarded a graduate degree. Students with lower grade-point averages are subject to dismissal. On the academic department's recommendation, the Graduate Dean either places such students on academic probation or dismisses them from graduate status. Graduate students carrying more than 12 units of Incompletes, No Record, and/or No Grades may be placed on academic probation and become subject to dismissal. For information concerning academic standards for graduate students, consult the chapter "Graduate Education at UCSB" or the Graduate Division web site at www.graddiv.ucsb.edu/academic.

In addition to the basic standards of scholarship detailed above, doctoral students who cannot develop a satisfactory dissertation research proposal or form a faculty committee of three members to supervise the dissertation research are subject to dismissal from graduate standing for failure to make satisfactory progress toward the degree. Doctoral students admitted fall 1995 or later must advance to candidacy within four years or be subject to dismissal. Master's students have four years to complete their degree; doctoral students have seven years.

Graduation

Undergraduate students are responsible for reviewing records carefully to ensure that they are completing all degree requirements. A New Student Profile listing degree requirements and any transfer credit earned is sent automatically to students when they are admitted to UCSB. A graduation check is performed by the Office of the Registrar when an undergraduate declares candidacy for graduation. As the graduation check is a final review of records, it occurs too late to be of assistance in deciding which courses to take during the last quarter.

Students in the College of Engineering who have completed 130 units should request a Progress Evaluation from the College's Office of Undergraduate Studies. This statement will indicate the student's progress in fulfilling university and college requirements, as well as major requirements.

Students in the College of Letters and Science who have completed between 84 and 134.9 units may request a Progress Evaluation from the college office. Students who have completed at least 135 units and who have not declared candidacy for graduation may request a Progress Evaluation from the Office of the Registrar. Only one such request will be honored for each student. These statements indicate the student's progress in fulfilling university and college requirements. For assistance in reviewing major requirements, students should consult their major department advisor.

Students in the College of Creative Studies are expected to consult with their assigned advisors on a quarterly basis to monitor progress, both in the major and toward graduation.

Undergraduate students may obtain information on progress and/or degree checks from their college office.

Graduate students must declare their candidacy for a graduate degree with both their academic departments and the Graduate Division at the beginning of the quarter they intend to complete the degree. A graduate degree cannot be awarded until the student has fulfilled all relevant university and departmental degree requirements, as determined by degree checks conducted by the student's academic department and the Graduate Division. The degree candidate is responsible for remedying any deficiencies found during a final degree check.

How to Graduate

All candidates for undergraduate degrees must announce their candidacy for graduation on RBT no later than the second week in the quarter in which the degree is anticipated. (See specific deadlines in the *Schedule of Classes.*) In order to graduate at the end of a given quarter, students must complete all work necessary for the fulfillment of degree requirements (including transfer work and any Incomplete grades) by the last day of the quarter. Students who find that they are not eligible to graduate as planned must withdraw candidacy for that quarter on RBT. Students must declare candidacy on RBT for the new date of graduation. The student will not be considered a candidate for a degree until such action is taken.

Graduate students must declare their candidacy for a graduate degree with both their academic departments and the Graduate Division at the beginning of the quarter they intend to complete the degree.

Commencement ceremonies

Although there are four possible dates of graduation each year (December, March, June, and summer), commencement ceremonies are held only once a year, in June. Undergraduate students whose names are on the degree list for one of the quarters in the current academic year (including spring and summer candidates for the degree) and who have completed or plan to complete all degree requirements, are eligible to participate in these ceremonies. Information concerning commencement will be sent to potential candidates during spring quarter. Undergraduate students with questions about commencement ceremonies are asked to phone (805) 893-8289. Graduate students may call (805) 893-2277. Due to budgetary cuts experienced by the university, it may be necessary to institute a modest charge to students participating in commencement ceremonies.

Diplomas

Diplomas are not available for several months after graduation. Graduate students should complete a Diploma Request form with the Office of the Registrar indicating the appropriate address. Students who need official verification of graduation before the diploma is ready may order transcripts from the Office of the Registrar. The degree earned must be indicated on the transcript request. If all degree requirements have been completed prior to the official date of graduation, and if immediate proof that requirements have been met is needed, undergraduate students may request a letter of verification from the Office of the Registrar. Graduate degree candidates who need proof of degree completion prior to receipt of their final transcript should request a letter of degree verification from the Graduate Division by using the appropriate request form when they declare their candidacy for a graduate degree.

Undergraduate honors at graduation

To be eligible for honors at graduation an undergraduate student must have completed at least 76 letter graded units within the University of California, including summer session but excluding UC Extension. If all graduation requirements are met, honors are awarded by each college as approved by the Committee on Undergraduate Scholarships, Honors, and Prizes. Honors are awarded to the top 20% in the following order:

Top 2.5%	*Highest Honors*
Next 6%	*High Honors*
Next 11.5%	*Honors*

The grade-point average thresholds for the above honors categories are calculated based on the population of graduates from the preceding academic year. In exceptional circumstances, students not meeting these criteria may petition the Committee on Undergraduate Scholarships, Honors and Prizes for special consideration.

Distinction in the Major is awarded to students who successfully complete a project or thesis with distinction as part of a departmental senior honors program.

College Honors are awarded to students in the College of Letters and Science who have completed 135 or more graded units in the University of California with a grade-point average of at least 3.85.

The *Certificate of Academic Excellence* is presented to students who have completed the College of Letters and Science Honors Program.

Because of the advanced nature of graduate degree work, no additional honors are assigned for the award of a graduate degree.

Student Conduct and Responsibility

Personal conduct

Students registered in the University of California assume an obligation to act in a manner compatible with the university's function as an educational institution. The publication titled *Campus Regulations Applying to Campus Activities, Organizations, and Students,* available from the Office of Student Life, describes policies and regulations concerning these issues.

Allegations of violations of campus or university regulations will be investigated by appropriate officials. The university reserves the right to make the final determination in any case of student discipline. All disciplinary actions are administered by virtue of authority vested in or delegated by the chancellor.

Academic conduct

The core of a university's integrity is its scholastic honesty. Academic dishonesty vitiates the university's educational role and defrauds all who comprise its community. It is expected that students understand and subscribe to the ideal of academic integrity and are willing to bear individual responsibility for their work. Materials submitted to fulfill academic requirements must represent a student's own efforts. Any act of academic dishonesty, such as plagiarism or other forms of cheating, is unacceptable and will be met with disciplinary action.

Student responsibility

Each student is responsible for compliance with the regulations printed in the *General Catalog,* college publications, and the *Schedule of Classes,* and with official notices published in the campus newspaper or posted on official bulletin boards. Changes of name or address or both must be reported to the Office of the Registrar immediately.

Student work

All material, of whatever nature, submitted by a student in satisfaction of all or any portion of a course requirement is the property of the university and is not subject to any claim on the part of the student who has submitted it. Any material produced by a student independent of any course requirement must be removed from university premises no later than the last day of the quarter in which the work was produced. The university assumes no obligation to hold or safeguard such material, and the risk of possible destruction, loss, or other disposition is assumed solely by the student.

Authority of instructors

Each instructor has the authority to determine whether a student is sufficiently prepared to enter upon or to continue in the study of that instructor's subject. However, an instructor may not exclude a student from a course on political grounds, or for reasons of race, religion, sex, sexual orientation, age, ethnic origin, disability, or for other arbitrary or personal reasons. A student who believes that such criteria were used may challenge the instructor's decision by means of the grievance procedures set forth in the Appendix.

A Statement of Campus Standards

Being a student at a world-class institution confers privilege, prestige, and unique opportunity, but it also obligates you to meet a set of standards and to fulfill certain expectations. I ask only three things from you as a student in our academic community: scholarship, leadership, and citizenship. If you deliver these and hold to the values articulated below, your time at UCSB will be more meaningful and what you take away at graduation will be infinitely more valuable.

Integrity in Academic Pursuits

In an institution where the search for knowledge and truth is the primary goal, integrity in teaching, learning, research, and scholarship is paramount. Dishonesty undermines our common missions. This translates into the obvious: write your own papers, take your own tests, do your own work.

Respect and Consideration in Interactions with Others

The real test of this value comes when we encounter people whose backgrounds, beliefs, and world views differ from our own. If your educational experience is all that it should be, you will graduate prepared to navigate a society that comprises many different kinds of people. You will also graduate having seen and understood different world views, and will perhaps expand your own. These are the key skills of the new century, and your education will be incomplete if you graduate without these abilities.

Mutual respect is a non-negotiable. What this means is that there are some boundaries that should not be crossed. Intolerant and disrespectful behavior, especially regarding race, sexual orientation, gender, ethnicity, and religion, compromises our sense of community and our ability to live and learn together.

Free, Open, and Respectful Exchange of Ideas

Our community requires the respectful exchange of ideas. People should be passionate about what they believe and how they express that belief, but they must also be civil in both word and deed. This principle is particularly important when a community encompasses people who have different backgrounds, world views, etc. I am not talking about political correctness, I am talking about basic respect — about how people treat one another, not about what people think or believe.

Contributions to and Participation in the Community

We should all serve the campus and community while we are here. Contributing to the community can take the form of simply being a good citizen, being considerate of neighbors, cleaning up the campus and community, volunteering at a school or social service in town, or helping to raise money for charity.

— Michael D. Young
Vice Chancellor for Student Affairs

Undergraduate Education at UCSB

Admission

The Offices of Admissions and Relations with Schools assist students in preparing for, applying to, and gaining admission to the University of California, Santa Barbara. Prospective students and their parents are invited to visit the campus to observe firsthand the opportunities available to them. Tour programs—which include a campus video, information about admission, housing, and financial aid, and a walking tour of campus led by a student guide—are offered most weekdays and occasional Saturdays. All tours leave from the Visitor Center. Students may call (805) 893-8175 for recorded tour information, or may contact the Office of Relations with Schools at (805) 893-2485 for application information.

Applying for Admission to UCSB

The first step in applying for admission to UCSB is to submit a University of California undergraduate application. The *Application for Undergraduate Admission* is available from California high schools and community colleges and from University of California campuses. The application and nonrefundable application fee should be sent to University of California, Undergraduate Application Processing Service, P.O. Box 23460, Oakland, CA 94623-0460; a pre-addressed envelope is included in the application.

The application is available on-line at UC's PATHWAYS web site at www.ucop.edu/pathways. Students may apply on-line, or download a copy of the application to mail to the address above.

When to apply for admission. To ensure admission consideration, students should file their application during the appropriate filing period.

Quarter	*Filing Period*
Fall 2001	**November 1-30, 2000**
Winter 2002	**July 1-31, 2001**
Spring 2002	**October 1-31, 2001**

UCSB will accept applications after the filing periods have ended only if the number of applications received to date and the number of enrollment spaces allow. Also, UCSB may not be open to applications for the winter and spring quarters. Students should contact the Office of Relations with Schools at (805) 893-2485 to inquire about the winter and spring quarter filing status.

Application restrictions. UCSB accepts applications from international students for fall quarter only.

The following majors accept applications for fall quarter only:

College of Letters and Science
- Computer Science (B.A.)

College of Engineering
- Chemical Engineering
- Computer Engineering
- Computer Science (B.S.)
- Electrical Engineering
- Mechanical Engineering

University of California Minimum Admission Requirements

All campuses of the University of California have the same minimum admission requirements. These requirements are used to identify the top 12.5 percent of California high school graduates and are based on two principles: (1) that the level of performance in previous academic work is the best predictor of university success, and (2) that the study of certain subjects provides sound preparation for university work.

Students who fulfill these minimum admission requirements are UC-eligible. In the event that UCSB receives applications from more UC-eligible applicants than can be accommodated, it admits students using selection criteria that are more rigorous than the minimum admission requirements.

Minimum Admission Requirements for Freshmen who are California Residents

Students are considered freshman applicants if they have not enrolled in a regular session at any college-level institution since graduating from high school. Enrollment in college summer session immediately following high school graduation does not affect the status of freshman applicants. There are three ways to satisfy the University's minimum admission requirements for freshman students: eligibility in the statewide context, eligibility in the local context, and eligibility by examination alone. These are the University's minimum admission requirements; satisfying them does not ensure admission to UCSB.

Eligibility in the Statewide Context

Eligibility in the Statewide Context is the pathway by which most students will attain UC eligibility. To be eligible in the statewide context, you must satisfy the Subject, Scholarship, and Examination Requirements described below.

Subject Requirement

To satisfy this requirement, students must complete the high school courses listed below with a grade point average defined by the Scholarship Requirement. This sequence of courses is also known as the "a-f" requirements.

Students must take 15 units of high school courses to fulfill the Subject Requirement, and at least 7 of the 15 units must be taken in their last two years of high school. (A unit is equal to an academic year, or two semesters, of study.)

Applicants from California high schools: The courses students take to fulfill the "a-f" requirements must be certified by the University as meeting the requirements and must be included on their high school's UC certified course list. High school counselors or principals will have a copy of this list. The lists are also available at the following web site: www.ucop.edu/pathways/infoctr/.

Beginning with applicants for fall 2003, the Subject Requirement will include one unit of coursework in visual and performing arts (dance, drama/theater, music or visual arts). The number of college preparatory electives (Area F) required will be reduced from two units to one, so the total number of Subject Requirement units will remain 15.

a. History/Social Science: 2 years required

Two years of history/social science, including one year of U.S. history or one-half year of U.S. history and one-half year of civics or American government; and one year of world history, cultures, and geography.

b. English: 4 years required

Four years of college preparatory English that include frequent and regular writing, and reading of classic and modern literature. Not more than two semesters of ninth grade English can be used to meet this requirement.

c. Mathematics: 3 years required, 4 years recommended

Three years of college preparatory mathematics that include the topics covered in ele-

mentary and advanced algebra and two and three dimensional geometry. Approved integrated math courses may be used to fulfill part or all of this requirement, as may math courses taken in the seventh and eighth grades that your high school accepts as equivalent to its own courses.

d. Laboratory Science: 2 years required, 3 recommended

Two years of laboratory science providing fundamental knowledge in at least two of these three disciplines: biology (which includes anatomy, physiology, marine biology, aquatic biology, etc.), chemistry, and physics.

Laboratory courses in earth/space sciences are acceptable if they have as prerequisites or provide basic knowledge in biology, chemistry, or physics. The appropriate two years of an approved integrated science program may be used to fulfill this requirement. Not more than one year of ninth grade laboratory science can be used to meet this requirement.

e. Language Other than English: 2 years required, 3 recommended

Two years of the same language other than English. Courses should emphasize speaking and understanding, and include instruction in grammar, vocabulary, reading, and composition. Courses in language other than English taken in the seventh and eighth grade may be used to fulfill part of this requirement if your high school accepts them as equivalent to its own courses.

f. College-Preparatory Electives: 2 years required

Two units (four semesters), in addition to those required in "a-e" above, chosen from the following areas: visual and performing arts, history, social science, English, advanced mathematics, laboratory science, and language other than English (a third year in the language used for the "e" requirement or two years of another language).

UNIVERSITY OF CALIFORNIA ELIGIBILITY INDEX
(California residents only)

A-F GPA	Test Score Total
2.80 - 2.84	4640
2.85 – 2.89	4384
2.90 – 2.94	4160
2.95 - 2.99	3984
3.00 – 3.04	3840
3.05 – 3.09	3720
3.10 – 3.14	3616
3.15 – 3.19	3512
3.20 – 3.24	3408
3.25 – 3.29	3320
3.30 – 3.34	3248
3.35 – 3.39	3192
3.40 – 3.44	3152
3.45 – 3.49	3128
3.50 and above	3120

Test Score Total equals:
[SAT I composite score] + [2 x (SAT II English score + SAT II Mathematics score + third required SAT II score)]. SAT I composite is the highest combined mathematics and verbal scores from a single sitting. Highest individual SAT II scores, from any sitting, will be considered.

ACT to SAT I Conversion Table

ACT Score	Equivalent SAT I score
36	1600
35	1580
34	1520
33	1470
32	1420
31	1380
30	1340
29	1300
28	1260
27	1220
26	1180
25	1140
24	1110
23	1070
22	1030
21	990
20	950
19	910
18	870
17	830
16	780
15	740
14	680
13	620
12	560
11	500

Scholarship Requirement

The Scholarship Requirement defines the grade point average (GPA) students must attain in the "a-f" subjects and SAT I (or ACT) and SAT II test scores to be eligible for admission to the University.

If the "a-f" GPA is 3.3 or higher, the student will have met the minimum requirement for admission to the University. If the GPA is below 3.3 but above 2.81, the student will have met the minimum requirement if the student achieves the necessary college entrance test score total indicated in the **University of California Eligibility Index** on this page.

The University calculates the GPA in the "a-f" subjects by assigning point values to the grades earned, totaling the points, and dividing the total by the number of "a-f" course units. Points are assigned as follows: A=4 points, B=3 points, C=2 points, D=1 point, and F=0 points.

Only the grades earned in "a-f" subjects in the 10th, 11th, and 12th grades are used to calculate the GPA. Courses taken in ninth grade can be used to meet the Subject Requirement if the student earns a grade of C or better, but they will not be used to calculate the GPA.

Honors Courses: The University assigns extra points for up to four units of University certified honors level and advanced placement courses taken in the last three years of high school: A=5 points, B=4 points, C=3 points. No more than two years of certified honors level courses taken in the tenth grade may be given extra points. A grade of D in an honors or advanced placement course does not earn extra points.

The courses must be in the following "a-f" subjects: history, English, advanced mathematics, laboratory science, and foreign language, and they must be certified as honors courses by the University. In these fields, as well as in the fields of computer science, social science, and the visual and performing arts, courses that are designed to prepare students for an Advanced Placement Examination of the College Board or a Higher Level Examination of the International Baccalaureate and college courses that are transferable to the University are acceptable honors level courses.

D and F Grades: D and F grades in the "a-f" courses must be repeated or validated. Students should consult with their counselors to determine how these grades can be improved and how the University will use them in evaluating their scholarship record. Grades for repeated courses in which students initially earned a grade of C or better will not be used.

Examination Requirement

All freshman applicants must submit the following test scores—students who do not take all the tests are not considered eligible for admission:

Either the Scholastic Assessment Test (SAT) I or the American College Test (ACT). The verbal and mathematics scores on the SAT I must be from the same sitting. The ACT composite score must be submitted.

Three Scholastic Assessment Test II: Subject Tests (SAT II), including Writing, Mathematics Level 1 or Level 2, and one test in one of the following areas: English literature, foreign language, science, or social studies.

Students applying for the fall 2001 term must take the tests no later than the December 2000 test dates. Students should be sure to direct the testing agencies to report their scores to each UC campus to which they plan to apply.

For the SAT I and II Tests:

College Board ATP
P.O. Box 6200
Princeton, NJ 08541-6200

For the ACT:

American College Testing Program
Scoring & Reporting
P.O. Box 451
Iowa City, IA 52243-0451

Eligibility in the Local Context

Under the Eligibility in the Local Context (ELC) pathway, the top four percent of students at each participating California high school are designated UC eligible and guaranteed admission to one of UC's eight general campuses, beginning with students entering UC in fall 2001.

To be considered for ELC, students must complete 11 specific units of the Subject Requirement by the end of the junior year. With the assistance of each participating high school, the University will identify the top four percent of students on the basis of GPA in the required coursework.

The 11 units include: 1 unit of history/social science, 3 units of English, 3 units of mathematics, 1 unit of laboratory science, 1 unit of language other than English, and 2 units chosen from among the other subject requirements.

The University will notify ELC students of their status at the beginning of their senior year. If you are designated UC-eligible through ELC, you must submit the undergraduate application during the November filing period and complete remaining eligibility requirements—including the Subject and Examination Requirements—to enroll.

ELC students are guaranteed a spot at one of UC's eight undergraduate campuses, though not necessarily at their first-choice campus.

Admission by Examination Alone

Freshman applicants who do not meet the Eligibility in the Statewide Context or Eligibility in the Local Context, may be able to qualify for admission to the University by examination. To satisfy the minimum requirements for qualify-

UCSB has more than 125 scholar-athletes (students who earn a 3.0 grade-point average or above) in the Big West Conference, more than any other school in the conference.

ing by examination alone, students must achieve a composite score of 31 or higher on the ACT or a total score on the SAT I of at least 1400. In addition, students must earn a total score of 1760 or higher on the three SAT II: Subject Tests with a minimum score of 530 on each test.

Students cannot qualify for admission by examination alone if they have completed 12 or more units of transferable coursework at another college or university following high school graduation, or if they have taken transferable college courses in any subject covered by the SAT II: Subject Tests.

Minimum Admission Requirements for Freshmen who are Nonresidents

There are two paths to UC eligibility for nonresidents at the freshman level. The first is the same as described above under Eligibility in the Statewide Context and the second is the same as described under Eligibility by Examination Alone, with the following exceptions:

Scholarship Requirement: The student's grade point average in the "a-f" subjects must be 3.4 or higher, regardless of the student's college entrance examination score. The Eligibility Index is used only for California residents.

Admission by Examination Alone: Students must earn a composite score of 31 or higher on the ACT or a total score on the SAT I of at least 1400. The student's total score on the three SAT II: Subject Tests must be at least 1850 with a minimum score of 530 on each test.

Minimum Admission Requirements for Advanced-Standing Students who are California Residents

There are four ways to meet the University's minimum admission requirements for transfer students, as described below. In all cases, students must have at least a C (2.0) average in all transferable coursework.

1. Students who were eligible for admission to the University when they graduated from high school—meaning they satisfied the Subject, Scholarship, and Examination Requirements—are eligible to transfer if they have a C (2.0) average in their transferable college coursework.

2. Students who met the Scholarship Requirement but did not satisfy the Subject Requirement must take transferable college courses in the subjects they are missing, earn a grade of C or better in each of these required courses, and earn an overall C (2.0) average in all transferable college coursework to be eligible to transfer.

3. Students who met the Scholarship Requirement but did not meet the Examination Requirement must complete a minimum of 12 semester (18 quarter) units of transferable work and earn an overall C (2.0) average in all transferable college coursework completed.

4. Students who were not eligible for admission to the University when they graduated from high school because they did not meet the Scholarship Requirement must:

   a. Complete 90 quarter units or 60 semester units of transferable college credit with a grade point average of at least 2.4, and

   b. Complete the following course pattern, earning a grade of C or better in each course:

   1) two transferable college courses (3 semester or 4-5 quarter units each) in English composition; and

   2) one transferable college course (3 semester or 4-5 quarter units) in mathematical concepts and quantitative reasoning; and

   3) four transferable college courses (3 semester or 4-5 quarter units each) chosen from at least two of the following subject areas: the arts and humanities, the social and behavioral sciences, the physical and biological sciences.

   (Students who satisfy the Intersegmental General Education Transfer Curriculum prior to transferring to UCSB may satisfy Option 4b of the transfer admission requirements.)

Minimum Admission Requirements for Advanced-Standing Students who are Nonresidents

The minimum admission requirements for nonresident transfer applicants are the same as those for residents except that nonresidents must have a grade point average of 2.8 or higher in all transferable college coursework.

Admission Requirements for International Students

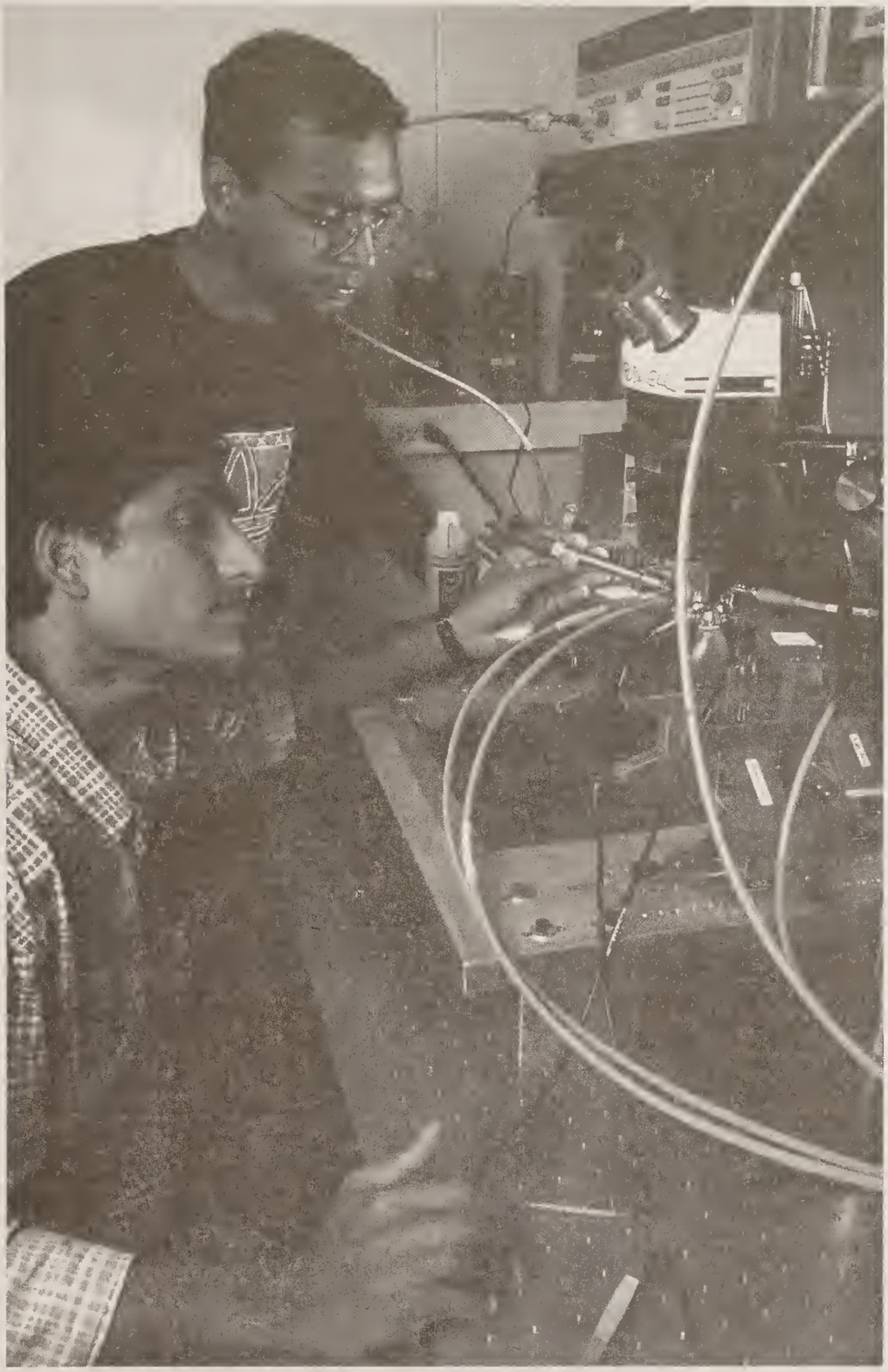
International students are governed by the same undergraduate admission regulations that apply to nonresident U.S. students. In addition, nonimmigrant applicants whose native language is not English must demonstrate written and oral competence in English by scoring 500 (173 on the computer-based exam) or above on the Test of English as a Foreign Language (TOEFL). For information on testing contact: TOEFL, P.O. Box 6151, Princeton, NJ 08541-6151. Telephone: (609) 951-1963.

UCSB Selection Criteria

The University makes every effort to provide a place on one of its campuses for all California resident applicants who meet the minimum eligibility requirements and file an application during the appropriate filing period. If the number of applicants exceeds the spaces available—as is often the case—the campus uses criteria that exceed the minimum requirements to select students. Meeting the minimum requirements, therefore, may not be enough to gain admission.

When there are more eligible applicants than spaces available, UCSB uses academic criteria alone—academic coursework, grade point average, SAT I or ACT results, and SAT II scores—to select between 50 and 75 percent of those accepted. It then uses a combination of academic and supplemental criteria to select the remaining students.

The selection criteria for the fall 2000 term are described in this section. The criteria vary



from year to year according to the number and qualifications of applicants to each campus and program.

Freshman Criteria

College of Letters and Science and College of Engineering

Criteria to Select Approximately 60% of Freshmen. Students will be selected on the basis of academic preparation and performance, as assessed by review of the following: high school GPA calculated on UC "a-f" courses completed, performance on SAT I (or ACT) and SAT II tests, completion of coursework beyond the "a-f" subject requirements, and the number of UC-approved AP and honors courses completed in the junior year and in progress/planned for the senior year.

Biological Sciences. The number of students that can be admitted to these majors is limited. For information, consult the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology.

College of Engineering. There is additional emphasis on preparation and test results in science and mathematics in the selection of students for the College of Engineering. Other factors considered include the quality of the senior year program and any additional information included in the application which would indicate the student's ability to succeed in the engineering program.

Criteria to Select Remaining Freshmen. The remaining percentage of freshmen will be selected on the basis of academic and personal achievement, promise, and experience, as assessed through a comprehensive review of all information provided on the application, including academic performance as described above and academic and personal information, as described in the admission guidelines.

College of Creative Studies

Criteria to Select 100% of Freshmen. Students will be selected on the basis of: high school GPA calculated on UC "a-f" courses completed, performance on SAT I (or ACT) and SAT II tests, completion of coursework beyond the "a-f" subject requirements, and the number of UC-approved AP and honors courses completed in the junior year and in progress/planned for the senior year; and special talent, outstanding achievement, and capacity for excellence in one of the eight academic areas within the College, as assessed by faculty review. All applicants must submit work in evidence of talent or letters of recommendation for faculty review.

Applicants must submit a College of Creative Studies application, available directly from the College, in addition to the regular UC undergraduate application.

Advanced-Standing Criteria

College of Letters and Science

Students will be selected primarily on the basis of academic preparation and performance, as assessed by review of grades earned in UC-transferable coursework and strength of academic preparation for the intended major.

Some students will be selected on the basis of academic and personal achievement, potential, and experience, as assessed through a comprehensive review of all information provided on the application, including academic performance as described above and academic and personal information, as described in the admission guidelines.

Preference will be given to junior-level California community college applicants.

Biological Sciences. The number of students that can be admitted to these majors is limited. At minimum, students must have earned a 2.7 GPA in one year of general chemistry and one year of the following: general biology, general physics, or calculus. For information, consult the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology.

College of Engineering

Students will be selected primarily on the basis of academic preparation and performance, as assessed by review of the following: grades earned in UC-transferable coursework, amount of engineering preparatory coursework completed, and grades earned in preparatory coursework.

Applicants must complete all required units

and prerequisites by the end of the spring term preceding enrollment at UCSB.

Preference is given to students who have completed 90 quarter (60 semester) units and who transfer from California community colleges.

College of Creative Studies

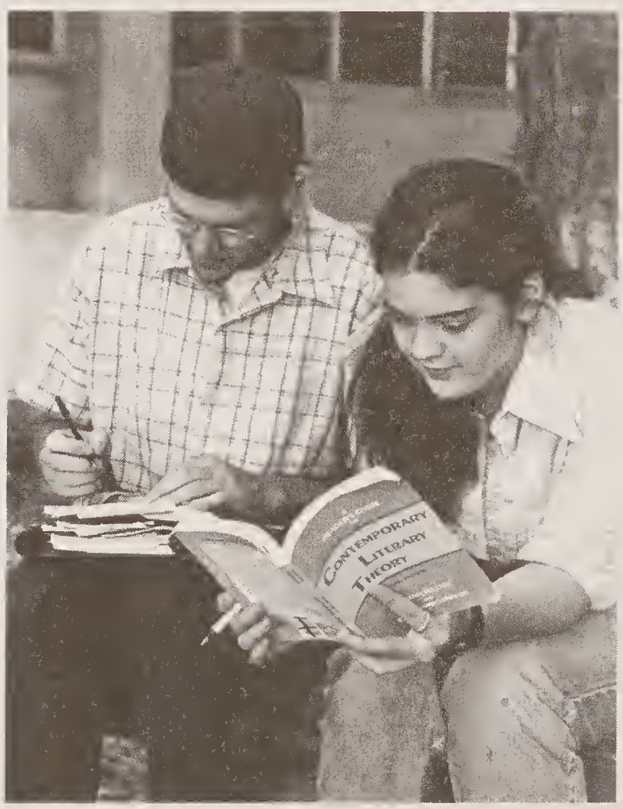
Students will be selected on the basis of: academic and personal achievement, potential, and experience, as assessed through a comprehensive review of all information provided on the application, including academic and personal information, as described in the admission guidelines; and, special talent, outstanding achievement, and capacity for excellence in one of the eight academic areas within the College, as assessed by faculty review. All applicants must submit work in evidence of talent or letters of recommendation for faculty review.

Applicants must submit a College of Creative Studies application, available directly from the College, in addition to the regular UC undergraduate application.

Limited Status

Students with a bachelor's degree who would like to complete additional upper-division coursework to prepare for graduate study and professional programs may qualify for admission to limited status. Students must file the *Application for Undergraduate Admission* during the appropriate filing period. Applications are subject to review and must be approved by both the director of admissions and the dean or provost of the college in which the student plans to enroll. Admission is selective and competitive; if enrollment limitations allow, admission will be granted to students whose academic records demonstrate their potential to succeed in their proposed area of study.

Limited status students are not eligible for financial aid or on-campus housing.



Limited status students may not enroll in graduate-level courses or apply courses completed in limited status toward graduate programs at UCSB.

Admission by Exception

UCSB gives special consideration to a limited number of freshman and transfer applicants who show potential to succeed at the University even though they do not meet the minimum admission requirements.

Intercampus Transfer

Students may apply to transfer from one UC campus to another by submitting the *Application for Undergraduate Admission* to the campus of their choice. Applications are available from the Office of Relations with Schools. If enrollment limitations allow, admission will be granted to students who are in good standing.

Credit from Other Institutions

UCSB accepts transferable coursework completed with satisfactory grades at accredited institutions, subject to the limitations described below. Most courses in academic subjects are transferable if UC offers a comparable course. Vocational courses and personal enrichment courses do not qualify for transfer credit. In most cases, UCSB will not grant credit for coursework which students complete at other institutions while they are also enrolled at UCSB.

Community College Limitations

Students may earn unit credit for up to 105 quarter units (70 semester units) of UC-transferable community college coursework.

Study Abroad Limitations

Study abroad programs sponsored by institutions and organizations other than the University of California's Education Abroad Program (EAP) are of varying quality. In many cases UCSB will not grant credit for completed coursework, even to students who have been issued an official transcript. Students should contact UCSB's Office of Admissions, as well as their department and college advisors, prior to undertaking study abroad to determine whether or not credit will be granted and, if so, how it will be applied.

Bachelor's Degree Requirements

To be eligible for a bachelor's degree from the University of California, Santa Barbara, students must meet the general University of California requirements and the appropriate college and major requirements. They must also comply with university regulations governing registration, scholarship, examinations, and student conduct.

Catalog Years

Official degree and major requirements are listed in the catalog. Undergraduate and graduate students are subject to requirements based on a particular catalog, referred to as the student's "catalog year." The catalog year is determined for new students as the catalog in effect at the time of their entrance to UCSB, provided there is no significant break in enrollment. It is campus policy to introduce changes in graduation requirements such that students who began their careers with UCSB before the change will not be hindered substantially in the orderly pursuit of their degrees. Changes in requirements that increase the number or distribution of courses required normally will not be applied to students with earlier catalog years. For undergraduate and graduate students, the catalog year for university and general education requirements is set as noted above. The catalog year for major requirements is determined by the quarter the major or pre-major is declared, provided there is no significant break in enrollment. Students must petition to follow a subsequent set of requirements.

Breaks in Enrollment

Students who interrupt their studies at UCSB with one or more breaks totaling nine quarters or more (excluding summer session) will be required to follow a newer catalog year than that of their initial admission. Upon their return, students who leave the University will normally be required to fulfill requirements as listed in the catalog published no earlier than three years prior to their final return. They must follow the same catalog year for all degree requirements, including:

- University requirements
- College requirements
- Major requirements.

Students transferring from other institutions may elect to meet as graduation requirements either: (1) those in effect at the time of transfer to UCSB; or (2) those in effect up to two years prior to matriculation provided their transcripts from earlier schools indicated commitment to the major within that period and they would not suffer in upper-division coursework due to inadequate preparation.

General University Requirements

University degree requirements include the Subject A-English Composition requirement, the American History and Institutions requirement, the unit requirement, the academic residence requirement, and the grade-point average requirement.

Subject A—English Composition Requirement

All students entering the University of California must demonstrate an ability to write effectively by fulfilling the Subject A requirement. The Subject A requirement may be met in one of five ways prior to admission:

1. by achieving a score of 680 or higher on the

SAT II: Subject Test in Writing (660 if taken before May, 1998);

2. by achieving a score of 3 or higher on the College Board Advanced Placement Examination in English Composition and Literature or English Language and Composition;

3. by passing the University of California systemwide Subject A Examination while in high school;

4. by achieving a score of 5 or higher on the International Baccalaureate (higher level) English A Examination;

5. by entering the university with transcripts showing the completion of an acceptable 3-semester unit or 4-quarter unit course in English composition equivalent to Writing 2 at UCSB, with a grade of C or better.

Students who have not taken the UC systemwide Subject A Examination and who have not met the Subject A requirement in one of the other ways listed above will be required to take the examination during their first quarter at UCSB (see the *Schedule of Classes* for examination time and location). An appropriate score on the examination will satisfy the Subject A requirement. Only one UC examination may be taken—either the systemwide Subject A Examination while in high school or the examination given at UCSB; and neither may be repeated.

Students who enter UCSB without having fulfilled the university's Subject A requirement and (if they have not previously taken the systemwide Subject A Examination) who do not achieve an appropriate score on the examination given on campus must enroll in Writing 1, 1E, or 1LK within their first year at UCSB. A grade of C or higher in Writing 1, 1E, or 1LK is needed to satisfy the Subject A requirement. Students who earn a grade of C- or lower in Writing 1, 1E, or 1LK will be required to repeat the course in successive quarters until the requirement is satisfied.

Once students matriculate at UCSB, they may not fulfill the requirement by enrolling at another institution. Transfer courses equivalent to Writing 2 or 50 will not be accepted for unit or subject credit unless the Subject A requirement has already been met. Students will only be allowed to meet the Area A requirement of the General Education Requirements with courses taken after satisfying the Subject A requirement. The Subject A requirement must be completed by the end of the third quarter of matriculation. Students who do not meet this deadline will be blocked from further enrollment at UCSB (ESL students should consult with the Writing Program).

American History and Institutions Requirement

The American History and Institutions requirement is based on the principle that American students enrolled at an American university should have some knowledge of the history and government of their country. You may meet this requirement in any *one* of the following ways:

1. by achieving a score of 3 or higher on the College Board Advanced Placement Examination in American History or American Government and Politics; or

2. by passing a non-credit examination in American history or American institutions, offered in the Department of History during the first week of each quarter. Consult the department for further information; or

3. by achieving a score of 650 or higher on SAT II: Subject Test in American History; or

4. by completing *one* four-unit course from the following list of courses:

Note: In this context, "course" refers to a one-quarter offering such as History 17A or Religious Studies 151B.

Anthropology 131
Art History 121A-B-C, 136H
Asian American Studies 1, 2
Black Studies 1, 6, 60A-B, 103, 121, 137E, 169AR-BR-CR
Chicano Studies 1A-B-C, 144, 168A-B, 174, 188A-C, 194
Dramatic Art 155A-B
Economics 113A-B, 119
English 133AA-ZZ, 134AA-ZZ, 135, 136A-B-C, 137A-B, 138A-B-C, 191
Environmental Studies 173
German 147
History 11A, 17A-B-C, 78, 105, 159A-B-C, 160A-B, 161A-B, 162A-B, 164C, 164IA, 164PR, 165, 166A-B-C, 166LA-LB, 167A-B-C-D, 168A-B, 168L, 169AR-BR-CR-M, 171A-B, 172A-B, 173A-B-S-T, 175A-B, 176A-B, 177, 178A-B-M, 179A-B
Law and Society 100
Military Science 1A, 1C, 7, 8, 11
Note: Military Science courses are two units each. Two acceptable Military Science courses will fulfill the American History and Institutions requirement.
Political Science 12, 113, 115, 127, 151, 152, 153, 155, 157, 158, 161, 162, 165, 166, 167, 168, 174, 176, 180, 185
Religious Studies 7, 14, 61A-B, 114B-C, 151A-B, 152
Sociology 137E, 140, 144, 155A, 157
Women's Studies 155A, 159A-B-C

Courses used to fulfill the American History and Institutions requirement may also be applied to General Education or major requirements, or both where appropriate. Equivalent courses taken at other accredited colleges or universities, in UC Extension, or in summer session may be acceptable. Students who transfer to UCSB from another campus of the University of California where the American History and Institutions Requirement has been considered satisfied will automatically fulfill the requirement at UCSB.

International students on a nonimmigrant visa may petition for a waiver of this requirement through the Director of International Students and Scholars.

Unit Requirement

A minimum of 180 quarter units is required for graduation. (Some students in the College of Letters and Science will need at least 184 units to graduate; see General Education Requirements, Area B—Foreign Language for details.) Some majors in the College of Engineering require more than 180 units (See individual majors in the College of Engineering chapter.). These units must be distributed according to the requirements set forth by the faculty of the various colleges, as explained in the following sections of this catalog and in the publications of the colleges.

The acceptability of transfer courses for unit credit is determined by the Office of Admissions. The applicability of such courses toward specific requirements is determined by the college provost or deans and/or department chairs.

Academic Residence Requirement

Candidates for a bachelor's degree must be registered in the university for at least three terms to fulfill the university's academic residence requirement. A term is a regular quarter in which a student completes six or more units of resident (on-campus) courses. Each UC summer session in which at least 2 units are completed is the equivalent of half a term's residence.

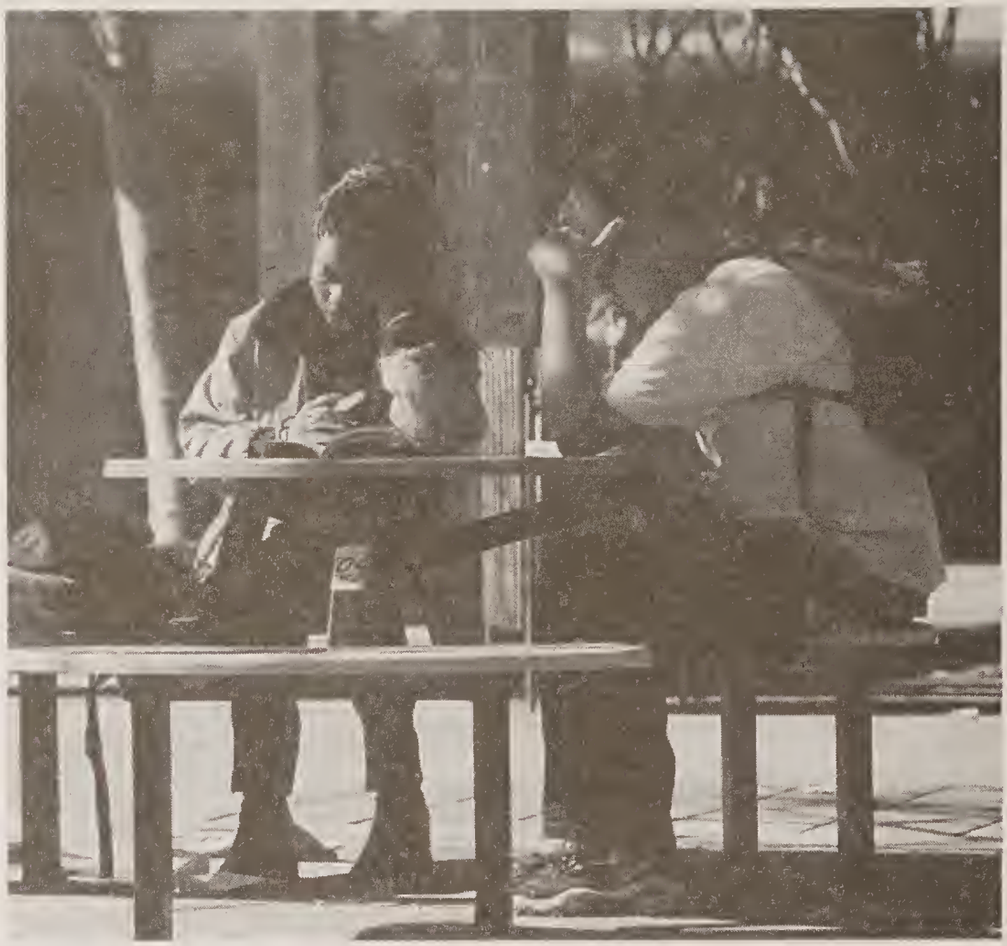
At least 35 of the final 45 units must be taken in the college or school in which the degree is to be awarded. No more than 18 of the final 35 units may be completed in summer session courses at UCSB. Courses taken in UC Extension do not satisfy residence requirements.

College of Letters and Science residence requirement. Students in the College of Letters and Science must complete at least 27 upper-division units, of which at least 20 must be in the upper-division major, while in residence in the college. (Students admitted prior to fall 1999 are required to complete 18 units of the upper-division major in residence.) In the case of double majors, at least 20 upper-division units must be completed in each major while in residence in the College of Letters and Science. Students who are pursuing an academic minor must complete at least 12 units of the upper-division minor in residence at UCSB. Courses used in satisfaction of residence in one major may not be applied to residence in another major or minor. Courses taken in University Extension and those completed in the university's Education Abroad Program do not apply to the residence requirement.

Credit earned at other institutions does not apply to academic residence. This includes coursework students complete at another campus of the University of California, even while simultaneously enrolled at UCSB. In addition, credit earned at UCSB through the intersegmental cross-enrollment option prior to matriculation will not apply to academic residence requirements.

College of Engineering residence requirement. Students in the College of Engineering must complete at least 27 upper-division units, of which at least 20 must be in the upper-division major, while in residence in the college. In the case of double majors, at least 20 upper-division units must be completed in each major (*i.e.,* not double counted) while in residence in the College of Engineering and in the College of Letters and Science. Courses used in satisfaction of residence in one major may not be applied to residence in another major. Courses taken in University Extension and those completed in the university's Education Abroad Program do not apply to the residence requirement.

Education Abroad or UCDC Program Participants. With one modification, students who participate in the University of California Education Abroad program or UCDC program are responsible for all academic residence requirements as explained above. For students who participate in EAP or UCDC as seniors, the rule requiring 35 of the final 45 units in the college or school in which the degree is to be awarded is modified to 35 of the final 90 units. Students must secure prior approval to use this modification and may graduate without returning to UCSB provided that they have satisfied all degree requirements by the end of their year abroad. Those who have any remaining degree requirements must return to UCSB to complete a minimum of 12 units on campus while fulfilling final degree requirements.



Grade-Point Average Requirement

At the time of graduation, students in the College of Engineering and the College of Letters and Science must have at least a 2.0 (C) grade-point average in (1) all courses undertaken at the University of California (UC) except those graded passed/not passed; (2) all UC courses required and acceptable for the student's overall major program, both lower- and upper-division; and (3) all UC courses required and acceptable for the student's upper-division major program.

Courses undertaken at any of the UC campuses, with the exception of UC Extension courses, are included in the computation of the grade-point average.

Courses appropriate for satisfying major requirements must be used in the computation of the grade-point average even if they are in excess of the minimum requirements of the major program. Courses graded Incomplete, except those taken on a passed/not passed basis, will be included as F grades in final computations. Certain courses designated as remedial are offered for workload credit only and do not figure in calculation of the grade-point average.

Students in the College of Creative Studies must, at the time of graduation, have a grade-point average of at least 2.0 (C) in all UC courses that have been undertaken for letter grades.

College Requirements

Students are required to meet requirements appropriate to their chosen degree, and described under each Colleges' sections in this catalog.

Major Requirements

To be eligible for graduation, all undergraduates must complete the requirements for a departmental or interdepartmental major in their college with the required grade-point average. As space permits, students may elect any approved major program for which they have met the stated prerequisites.

Major departments and/or committees may require auditions, placement examinations, proposals, specified courses, and/or grade-point averages to determine whether students are qualified for specific courses or for entrance into or continuation in a major.

Students who fail to attain a grade-point average of at least 2.0 in work in their major may, at the option of the major department or committee, be denied the privilege of continuing in that major.

Students in the College of Engineering and the College of Letters and Science normally must complete the major requirements in effect at the time they declare their major, though they may petition to follow a subsequent set of requirements.

Changes in major requirements that increase the number or distribution of courses required normally will not be applied to students continuing in such majors.

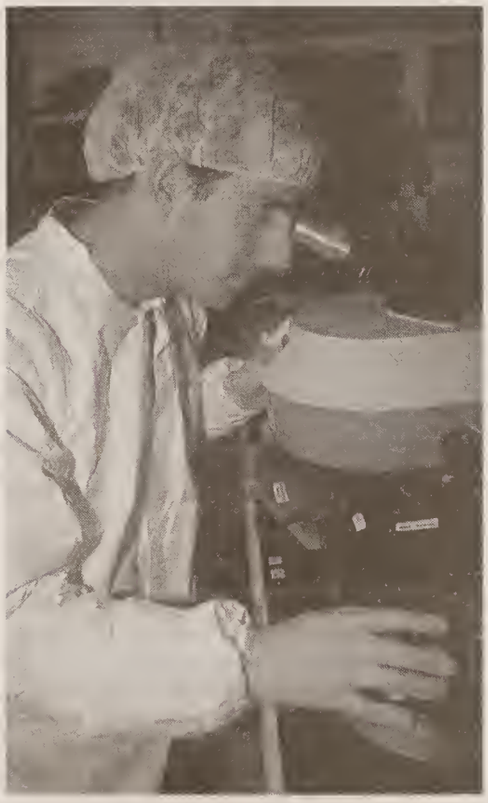
Graduate Education at UCSB

Graduate Division, Cheadle Hall 3117;
Academic Affairs
Financial Support
Outreach, Admissions, and Retention
Telephone: (805) 893-2277
Web site: www.graddiv.ucsb.edu

Dean: Charles N. Li
Associate Dean: Diane M. Mackie

Innovative and interdisciplinary, UCSB offers graduate degree programs that are among the finest in the world. Together, faculty and graduate students work on cutting-edge research using the most current techniques and methodologies. In a process extending from problem definition through research to dissemination of findings in scholarly journals and professional conferences, UCSB graduate students are trained to assume leadership positions in academia, private industry and public service.

Recently ranked the second top public research university in the country, UCSB graduate programs receive national acclaim. Four UCSB programs were ranked within the top ten in the country by the National Research Council and another six ranked in the top 20. Overall, approximately half of the UCSB programs so ranked were within the top 25 departments nationwide. Supplementing UCSB's graduate programs and coursework are national research centers, organized research units and affiliated academic units headquartered at the UCSB campus that provide additional opportunities for research, study or research abroad, or experiential learning. Also complementing the departmental training are graduate certificate programs in Management Practice and College and University Teaching or special degree emphases that highlight the focus of one's academic interest. Graduate departments are large enough to offer undergraduate teaching experience as part of their graduate training, yet small enough to provide a sense of community in which faculty mentor students individually and students interact across department or divisional boundaries. This balance enhances theoretical learning, technical training, and independent inquiry.



The Graduate Division

The Graduate Division facilitates and coordinates graduate education and student services for all graduate academic and professional programs at the University of California, Santa Barbara. Under the supervision of the Graduate Deans and under policy set by the Academic Senate Graduate Council, the Division promotes academic excellence in graduate degree programs, fosters a diverse and inclusive graduate community of domestic and international students, and cultivates an intellectually challenging environment and a socially supportive climate for all graduate students.

Sections within the Graduate Division have unique roles. Outreach, Admissions, and Retention facilitates the recruitment, admission, and enrollment of highly qualified and diverse student applicants, and provides support services, special events and programs for the development and retention of enrolled graduate students. Academic Services advises students through the challenges of graduate study, monitors and encourages the progress of students through degree completion and promotes academic standards. Financial Support administers fellowship and loan programs, maintains an extramural funding database, and certifies student eligibility for academic appointments. All are committed to the recruitment, admission, and retention of a diverse and highly qualified graduate student population.

In collaboration with other campus organizations, the Graduate Division sponsors special programs for graduate students, such as dissertation support groups, research colloquia, and workshops on such topics as grant proposal development and professional career planning.

Application and Admission

UCSB offers admission to those applicants who have the highest potential for graduate study and who are most likely to contribute substantially to their academic or professional fields through teaching, research, or professional practice. In recognition of the value of a diverse range of ideas and experiences in the learning process as well as in the professional world, the University remains committed to the recruitment, admission, and retention of a diverse graduate student population. UCSB encourages applications from students who have overcome economic or social disadvantage in pursuing their academic objectives and those who bring perspectives, research topics, or career interests that advance the University's goals of excellence and diversity. Among our goals is achieving a student population of men and women reflective of the population at large, inclusive of those traditionally underrepresented in various academic fields and all socioeconomic levels, physical abilities, ages, religions, national origins, sexual orientations, and other attributes.

Requirements and Procedure

To be considered for admission to UCSB, applicants must have received a bachelor's degree or its equivalent (with an upper-division grade point average of 3.0 or better) from an accredited university prior to the quarter for which admission is sought. Applications are available in UCSB's Graduate Division or any of its academic departments. Students may apply on-line through the Graduate Division's web site at www.graddiv.ucsb.edu/eapp/.

A completed application includes:

- A completed Scantron or electronic application.
- Two copies of your statement of purpose.
- A $40 nonrefundable fee. An application fee paid to another University of California campus is *not* valid for application to UCSB.
- Three letters of recommendation from professors or others familiar with your academic work.
- Official Graduate Record Exam scores (submitted directly from ETS, in the Graduate Division database, or submitted by the student to Graduate Division only if an official score cannot be sent from ETS). Some departments also require a score from the appropriate GRE subject exam. UCSB's GRE institution code is 4835.
- TOEFL Exam scores, taken within the past two years (when applicable).
- Two official transcripts from each institution attended since high school or secondary school.
- Any other supplementary materials required by your department or the Graduate Division.

All domestic applicants must file the Free Application for Federal Student Aid (FAFSA) as part of the application process by March 2, 2001. Web site: www.fafsa.ed.gov.

Admission decisions are based on the quality of the applicant's academic degrees and record, as presented in the application and supporting

documents. Also contributing to the decision are evidence of preparation in the proposed field of study, work experience, and the degree to which the individual's goals and research interests are consistent with those of the academic program and its faculty.

When application packages are complete, they are submitted to faculty committees for review, following which recommendations of admission or denial are communicated to the Graduate Division. Due to the large number of applications received, many well-qualified applicants cannot be admitted.

Application Deadlines

The application deadline to be considered for most fellowship competitions is January 15, with many departments having earlier deadlines. The standard application deadlines are May 1 (Fall), November 1 (Winter), and February 1 (Spring), but it is important to consult the application and departmental sources for variations. For further details, please consult your prospective department, the Graduate Application, or the Graduate Division web site at www.graddiv.ucsb.edu. The completed application and all supporting materials must be received by 4 p.m. on the given date, or they will not be processed. Deadlines falling on a weekend or national holiday will be extended to the next working day.

Deadlines and specific admission requirements, which may vary by department, are summarized in the application packet as well as in subsequent chapters of this catalog. Further detail may be available in discipline-specific brochures distributed by departments.

Admission of International Students and Permanent Residents

International and permanent resident students are governed by the same general admission regulations as those applying to United States citizens. For information and special assistance, students are encouraged to contact The Office of International Students and Scholars at (805) 893-2929.

English language requirements for nonnative speakers. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper based test or 213 when taking the computer based test; some departments require a higher score. Applicants must make arrangements to take the TOEFL directly with the Educational Testing Service at P.O. Box 6151, Princeton, N.J. 08541-6151. Please instruct them to report the scores to UCSB; our institution code is 4835. TOEFL scores must be no more than two years old at the time of admission. UCSB does not admit students conditionally in order to learn English prior to beginning an academic program—an excellent command of written and spoken English is required prior to enrollment.

Once admitted, nonnative speakers of English must meet proficiency requirements in spoken and written English before they will be awarded a degree at UCSB. Such requirements are met through successful performance on the English Language Placement Examination (ELPE), and, if necessary, English as a Second Language (ESL) classes. At the beginning of their first quarter of registration at UCSB, nonnative speakers of English—including both international students and permanent residents—are required to take both the written and oral portions of the ELPE. Based upon the results of this exam, students will be either placed in or exempted from ESL courses. Students for whom the TOEFL requirement has been waived may still be required to take the ELPE. Students visiting UCSB under the Education Abroad Program and non-degree reciprocity status are exempt from taking the ELPE; if they later petition for admission to a graduate program to seek a master's degree or doctorate, they must take the ELPE at that time. If EAP or non-degree reciprocity status students wish to take an ESL course, they must first take the ELPE for placement purposes.

Teaching Assistant language evaluations. All international students and permanent residents for whom English is not the native language are required to have their spoken English evaluated before they can be certified for classroom or laboratory teaching responsibilities. Prospective TAs who do not pass the TA language evaluation on their first attempt are required to take ESL classes before they can be reevaluated. TA language evaluations are conducted jointly by the academic departments, the ESL Program, and Graduate Division.

Non-degree Status

In exceptional circumstances, applicants who do not wish to study for a degree or a teaching credential may be admitted to graduate status on a non-degree basis. The admission requirements and procedures are the same as those for prospective candidates for degrees, with the exception that many departments do not require the Graduate Record Examination. The applicant must specify the major and must justify, in the statement of purpose, that the plan of study has a definite scholarly or professional goal. A non-degree student is accepted for a maximum of one academic year. Students in non-degree status are not eligible for fellowships, nor are their courses ordinarily accepted for credit toward an advanced degree at UCSB should they decide later to apply for admission into a master's or doctoral program. (For information on Limited Status at UCSB, see the chapter "Undergraduate Education at UCSB".)

Graduate Degree Programs

Degrees, Emphases, and Specializations

Graduate degrees at the University of California are granted upon completion of advanced academic study and research. Doctoral degree candidates are expected to participate in at least one basic research project, as are many master's degree candidates.

Degree titles are posted on transcripts and diplomas for the eight graduate degrees conferred at UCSB:

Doctor of Musical Arts (D.M.A.)
Doctor of Philosophy (Ph.D.)
Master of Arts (M.A.)
Master of Education (M.Ed.)
Master of Environmental Science and Management (M.E.S.M.)
Master of Fine Arts (M.F.A.)
Master of Music (M.M.)
Master of Science (M.S.)

Some departments offer intradepartmental and/or interdepartmental emphases within degree objectives. An *emphasis* is a formally approved sub-component of a degree program; it is noted on the student's transcript but does not appear on the diploma.

Use of the terms *specialization* or *area of study* indicates that several faculty are working in a particular area, or that the department offers a cluster of related courses. Specializations do not appear on transcripts or diplomas.

General Requirements for Graduate Degrees

Graduate Council's minimum requirements for advanced degrees are described below. (See information regarding "Catalog Years" on page 38.) Individual departments often impose additional requirements. Students should consult the academic department for updated and specific requirements in excess of the minimum requirements. Students admitted with deficiencies in background or training must remedy these deficiencies before advancement to candidacy, usually during the first year of residence.

Academic residence. Students in master's programs must spend a minimum of three quarters in residence at UCSB, of which at least one quarter must be a regular session (fall, winter, or spring quarter). Two UCSB summer sessions of full-time work are equivalent to one quarter of residence for students working on a master's degree. Students in doctoral programs must spend at least six regular academic quarters in residence on the UCSB campus. Three consecutive quarters of this residence must be completed in regular session before advancement to candidacy. Summer sessions do not count toward fulfillment of the academic residence requirement for doctoral students.

Language and methodology requirements. Academic departments set language and methodology requirements for their fields; students should consult the academic department for details.

Standards of scholarship. Only upper-division and graduate courses in which a student earns grades of A, B, C, or S may be applied toward the unit requirements for graduate degrees. In courses specifically required for a program—often called *core courses*—grades of A or B must be earned for the course to count toward degree requirements. Neither lower-division courses numbered 1-99 nor undergraduate independent study courses numbered 198-199 count toward unit requirements for graduate degrees.

Students must maintain a cumulative grade-point average of at least 3.0 to remain in graduate status. Students with less than a 3.0

grade-point average will either be placed on academic probation or dismissed from graduate status by the Graduate Dean upon recommendation by the students' academic department. Graduate students carrying more than 12 units of Incompletes, No Record, and/or No Grades may be placed on academic probation and become subject to dismissal for failing to make timely progress toward degree completion.

Graduate students must complete coursework and have a grade reported to the Office of the Registrar by the end of the term following the term in which the No Grade, No Record, and/or I grade was reported. If not completed by the deadline the No Grade, No Record, and/or I grade will be changed automatically to an F, NP, or U as appropriate.

Note: Additional standards of scholarship are described below.

Degree deadlines and normative time. The UCSB Graduate Council has set maximum time limits for degree completion to ensure that students make timely progress toward completion of their degree objectives. Graduate Council is concerned that graduate degrees are granted only to students who are current in the scholarship of their chosen field. Students who are not making adequate progress toward degree completion in terms of the standards presented below may be dismissed upon the recommendation of their departments. Academic departments may set time limits in addition to the minimum standards described below.

Graduate Council has set four years as the time limit for completion of master's degrees at UCSB. The time limit for completion of a doctoral degree is seven years from the time of admission to and enrollment in a doctoral program. A student's first quarter in a doctoral program is defined as one in which the degree objective of Ph.D. or D.M.A. is reflected on records maintained by the Office of the Registrar. In addition, doctoral students admitted fall 1995 or later are required to advance to candidacy for the doctorate within four years of admission to and enrollment in a doctoral program. A student who exceeds one of these time limits must petition for an extension. A petition for an extension of a degree deadline must be accompanied by departmental certification that the student is current in the literature and research of the discipline.

Graduate Council's degree deadlines are distinct from normative time, which is the number of years considered to be reasonable by the faculty of the department for completion of a doctorate by a full-time student in that program. Normative time, which varies by department, is measured from the time a student begins graduate studies at UCSB. (See accompanying table for the normative time established in each department.)

Enrollment Requirements. Continuous registration is required of all graduate students; the normal courseload for graduate students is twelve units per quarter. Graduate students must enroll in at least eight units to be appointed as graduate student researchers or as teaching assistants, to receive fellowships and most forms of financial aid, and to be eligible for campus and extramural benefits and services (University Housing, Student Health Service, etc.).

There are no reduced fees for a reduced courseload. Most lending agencies demand repayment of loans if a student is not registered or is carrying less than a normal courseload. The Immigration and Naturalization Service requires international students to be engaged in a full course of study while at UCSB.

Graduate students who fail to register lose all status as students, including access to the privileges outlined above. Students who wish to return to registered status must apply for reinstatement and, when applicable, for readvancement to candidacy. Students who failed to register may petition for reinstatement. Reinstatement is not automatic; it is subject to the approval of the academic department and Graduate Division.

Leaves of absence. Under certain circumstances, students may petition for a leave of absence that must be approved by the student's department and Graduate Division. There are six categories of leave: 1) leave for medical emergencies (doctor's note required); 2) leave for pregnancy/parenting needs during the first 12 months after the child's birth or placement in the home (doctor's note or verification from placement agency); 3) leave to deal with emergencies in the immediate family (explanation of circumstances required); 4) military leave for students required to engage in military service (documentation of call to duty required); 5) Research Leave for students who will be away from the campus conducting research and not using faculty time or University resources (faculty verification required); 6) A Filing Fee Quarter of Leave for students who intend to file the thesis or dissertation the quarter of the leave request (faculty verification required.

Off-campus employment, lack of funds, exam preparation, or taking time off from school for personal reasons do not warrant leaves of absence. Students who do not register and who do not have a leave of absence must seek reinstatement if they wish to return to graduate standing. Graduate students studying outside the state of California for a quarter or more are encouraged to consider registering *in absentia*, which entitles them to a one-half reduction of the registration fee and allows them to maintain continuous registration.

Medical, parenting, family emergency, or military leaves are usually granted on a quarter-by-quarter basis, with a maximum of three quarters during the student's career. Quarters of Research Leave and Filing Fee Quarters of Leave are counted separately.

Graduate students who are granted leave are not eligible for either teaching assistant or graduate student researcher positions or for campus fellowships or financial aid. A leave of absence is no substitute for registered status in the eyes of lending agencies.

Transfer of credit. Credit for upper-division and graduate courses may be transferred to UCSB only if the student was enrolled in a graduate program when the courses were completed and they have not been applied toward a degree already awarded. Graduate students must complete one quarter of residency at UCSB before they can petition to transfer units earned elsewhere. With the permission of Graduate Division and the academic department, up to eight quarter-units of credit for courses completed with a B or better from an accredited college other than another University of California campus may be transferred as upper-division credit toward a graduate degree. Up to twelve quarter-units may be transferred from another UC campus. Transferred units will be treated as Passed/Not Passed and will not be counted in calculating the grade-point average at UCSB. Course titles of transferred units are not reflected on the UCSB transcript for graduate students.

No transfer credit is allowed for any course taken as an undergraduate. No courses taken during UCSB Summer Session will apply toward a graduate degree or teaching credential unless admission to graduate standing at UCSB was effective in the summer or in a previous

NORMATIVE TIMES FOR COMPLETING DOCTORAL PROGRAMS AT UCSB

Years	Doctoral Program
7	Anthropology
7	Art History
6	Biochemistry & Molecular Biology
5	Chemical Engineering
5	Chemistry
7	Classics
5	Communication
6	Comparative Literature
5	Computer Science
6	Counseling Psychology
5-6**	Dramatic Art
6	Ecology, Evolution, and Marine Biology
5	Economics
6	Education
5	Electrical & Computer Engineering
6-7**	English
6	Environmental Science and Management
6-7**	French
5-6**	Geography
5.5	Geological Sciences
6	Germanic Languages & Literatures
6	Hispanic Languages & Literatures
7	History
7	Linguistics
6	Marine Science
5	Materials
5-6**	Mathematics
5	Mechanical Engineering
5.5	Molecular, Cellular, and Developmental Biology
6	Music
6	Philosophy
6	Physics
6	Political Science
5	Psychology
6-7*	Religious Studies
6	Sociology
5	Speech & Hearing Sciences
5	Statistics

*dependent on additional language requirements.

**dependent on whether the student entered with or without a master's degree.

quarter. Ordinarily, no credit is allowed toward an advanced degree for units taken while in non-degree status.

Students who had formally applied to a UCSB graduate degree program at the time they completed coursework through UC Extension's Concurrent Enrollment may transfer up to 12 units of credit to their graduate program if admitted. Students must petition their academic department and Graduate Division for approval. Units taken through concurrent enrollment prior to filing an application cannot be transferred.

Graduate students may not take courses through concurrent enrollment which can be completed through regular enrollment at UCSB. If such courses are taken, no unit credit will be counted toward fulfillment of degree requirements set by the UCSB Graduate Council.

Graduate students must receive permission from Graduate Division to take "special" Extension course offerings—i.e., coursework other than concurrent enrollment courses. Consult the Graduate Division for a petition and further information.

Since departments are normally interested in the competencies attained in previous coursework rather than in unit credit, students should consult their academic departments and the Graduate Division to determine if a transfer of units is necessary.

Final degree requirements. A graduate degree cannot be awarded until the student has fulfilled all Graduate Council and departmental degree requirements, as determined by degree checks conducted by the student's academic department and the Graduate Division. The student is responsible for remedying any deficiencies found during a final degree check.

Filing fee. All students must be in a fee relationship with the University the quarter their degree is awarded—i.e., they are either registered or pay a filing fee. The filing fee is a reduced fee paid instead of full registration fees the quarter a student is completing the last requirement for a degree. Payment of the filing fee does not entitle the student to any of the privileges and services that accompany full registration, except for filing. Doctoral degree candidates may use it to file the dissertation. Because paying the filing fee terminates graduate status, it may be used only by terminal master's degree students who have finished all requirements with the exception of the comprehensive exam or filing the thesis.

Changes in degree requirements. As research or new knowledge develops, departmental requirements may change. Departments may ask students to accept additional or new requirements. In general, a student follows the departmental degree requirements set forth at the time of the student's admission. If requirements change, the student is usually given the option of continuing under the original requirements or changing to the revised curriculum.

Master's Degree Requirements

In many departments, the master's degree is looked upon as a stage on the path to the doctorate. In some programs, students may pursue a terminal master's degree. Some departments provide one track for students who will seek the doctoral degree and another track for students who intend to pursue careers outside academia. Graduate Council's minimum requirements for the master's degree are described below. Individual departments often impose additional requirements. Students should consult the department for updated and specific requirements in excess of the minimum requirements.

Degree Plans. The master's degree may be obtained in one of two ways: Plan 1 requires a thesis; Plan 2 requires a comprehensive examination. Departments may offer one or both of these plans. Students in either plan must satisfy all departmental and UCSB Graduate Council requirements. The study plan of every master's student must be approved by the department.

Plan 1 (thesis). In addition to the submission of an acceptable thesis, this plan requires completion of a minimum of 30 units of upper-division and graduate coursework, of which at least 20 units must be at the graduate level (excluding courses numbered 597 or 598, units for teaching assistant duties or training, or service as a graduate student researcher). A maximum of 10 units of the required 20 graduate units may be in 596 coursework. Some departments also require completion of an examination at the conclusion of coursework.

A master's thesis committee consists of a minimum of three tenure-track faculty members (also called ladder faculty), at least two of whom must be from the student's home program. The chair (or one of the co-chairs) must be from the student's home program. Some departments may require more than three ladder faculty on thesis committees, including a faculty member from another discipline. The chair of this committee advises the student on a course of study and usually directs the thesis research. The committee is nominated by the department chair in consultation with the student and approved by the Graduate Dean. The Graduate Dean will consider written requests for exceptions to thesis committee policy from departments. All committee members must approve the thesis.

The thesis must be presented in a form acceptable to the UCSB Library and meet the filing requirements of the Graduate Division. For details, see the Graduate Division publication, *Guidelines for the Preparation and Filing of Theses and Dissertations at UCSB.* The student is also responsible for fulfilling disciplinary norms and requirements affecting content of theses.

Plan 2 (comprehensive examination). In addition to the successful completion of comprehensive examinations, this plan requires completion of a minimum of 36 units of upper-division and graduate coursework, of which at least 24 units must be at the graduate level (excluding courses numbered 597 or 598, units for teaching assistant duties or training, or service as a graduate student researcher). A maximum of 12 units of the required 24 graduate units may be in 596 coursework.

Master's degree comprehensive examination committees normally consist of at least three faculty members. In some departments the chair appoints one committee for all candidates taking examinations in a given quarter.

Doctoral Degree Requirements

UCSB offers two doctoral degrees: the Doctor of Philosophy (Ph.D.) and the Doctor of Musical Arts (D.M.A.). The Ph.D. is not a unit-count degree but is a research degree awarded upon demonstration of the student's academic excellence and research capability. To that end, doctoral students must pass doctoral qualifying examinations to demonstrate mastery of their chosen field and produce a dissertation acceptable to the student's doctoral committee. Doctoral students normally follow a plan of study determined in consultation with their advisors. The D.M.A. is a professional degree with dis-

tinct course, performance, and research requirements. Specific degree requirements for each discipline are described in the department's section in this catalog.

Doctoral committees. A doctoral committee consists of a minimum of three ladder faculty, two of whom must be from the student's home program; additional members from the department or from other disciplines may be added either to meet departmental requirements for additional members or at the student's discretion. The chair (or one of the co-chairs) must be from the student's home program. In some departments, the same committee conducts qualifying examinations and supervises work on the dissertation; in other departments separate committees are nominated. It is not unusual for doctoral committee membership to change during the course of a student's work on the doctorate.

The doctoral committee is nominated by the department chair in consultation with the student and approved by the Graduate Dean. The chair of the committee advises the student on a course of study leading to the qualifying examinations and usually serves as director of the student's dissertation research. The Graduate Dean will consider written requests for exceptions.

Qualifying examinations and advancement to candidacy. All doctoral students are required to officially advance to candidacy for the doctorate. In order to officially advance to doctoral candidacy, students must satisfy all course and residence requirements; be registered; fulfill foreign language and/or methodology requirements set by the academic department; pass departmental preliminary and screening examinations; pass oral qualifying examinations administered by the student's doctoral committee (as well as written qualifying examinations in some departments); and pay an advancement to candidacy fee of $65 at the Graduate Division. Students admitted for fall quarter 1995 or later must advance to candidacy within four years of admission or be subject to dismissal.

In a few departments, students may petition for the award of the candidate in philosophy (C.Phil.) degree at the time they advance for the Ph.D. Students must petition the Graduate Division for award of the C.Phil. within one year of passing their oral qualifying examination. The C.Phil. degree certifies that a student has completed all doctoral requirements except for the dissertation. The C.Phil. degree is awarded only to Ph.D. candidates on recommendation of departmental faculty in those departments which have elected and been approved by the Graduate Council to award the C.Phil. degree. No applicant will be admitted with a final degree objective of C.Phil.

Additional standards of scholarship. In addition to the basic standards of scholarship detailed above, doctoral students who cannot develop a satisfactory dissertation research proposal or form a faculty committee of three members to supervise the dissertation research are subject to dismissal from graduate standing for failure to make satisfactory progress toward the degree.

Doctoral students are required to complete their degree requirements in a timely manner. As noted above, doctoral students have four years from beginning a doctoral program to officially advance to doctoral candidacy and seven years to complete the doctorate. Academic departments may set time limits for completion in addition to the minimum standards established by the UCSB Graduate Council. Students may be recommended for dismissal by their respective departments if they do not make timely progress toward degree completion.

Dissertation and filing requirements. The doctoral dissertation must be the result of original research in the field of the candidate's specialization. The candidate's doctoral committee determines the acceptability of the dissertation; all members of the committee must approve the dissertation. Departments may require a defense of the dissertation, or waive the defense if appropriate.

The dissertation must be presented in a form acceptable to the UCSB Library and meet the filing requirements of the Graduate Division. For details, see the Graduate Division publication *Guidelines for the Preparation and Filing of Theses and Dissertations at UCSB*. The student is also responsible for fulfilling disciplinary norms and requirements affecting content of dissertations. Ph.D. degree candidates must complete a Permission to Microfilm form, the UCSB Survey of Doctoral Degree recipients, and a Survey of Earned Doctorates (SED) questionnaire available at the Graduate Division. The Graduate Council requires that dissertations be microfilmed by University Microfilms International to allow for the widest possible dissemination of knowledge. The Survey of Earned Doctorates, conducted by the National Research Council, provides nationwide information on all Ph.D. recipients, their fields, their career plans and other pertinent data.

Graduate Programs of Interest

Intercampus Exchange Program for Graduate Students

Enrolled graduate students at UCSB may study at other UC campuses. By using the Intercampus Exchange Program for Graduate Students (IEPGS), students may enroll in courses not offered at UCSB, study under the guidance of a specialist in residence at another UC Campus, or gain continuing access to library holdings or facilities not available at UCSB. Consult the UCSB Graduate Division for further details.

Education Abroad Program

As part of a graduate program at UCSB, students may study abroad through UC's Education Abroad Program (EAP) at one of 120 host universities and colleges in some 34 countries throughout the world. Students who meet minimum requirements, have completed at least one full year of graduate study, and have the support of their academic department and graduate dean may apply. A list of EAP host universities and more information appears in the section titled "Education Abroad Program" in the "Additional Academic Programs" chapter of this catalog.

Off-Campus Studies Program

This program serves working adults who wish to pursue a master of science degree in either computer science or electrical and computer engineering, but cannot do so on a full-time basis because of their employment responsibilities. Admission requirements, degree requirements, and fees are the same as for on-campus students. To be eligible for this program, a student must be employed full-time by an organization other than UCSB. For further information, call (805) 893-4056. E-mail: ocs@vencen.ucsb.edu.

Postgraduate Study Through UCSB Extension International Programs

International students who are interested in undertaking advanced study at a major university in the United States but who are unable to enroll for the full period of a degree program can apply to participate in short-term graduate study at UCSB through UCSB Extension's Postgraduate Study program.

The Postgraduate Study program is designed for individuals who have completed their first university degree or have equivalent experience. The program provides an opportunity for individuals to select a course of study in one of over 50 master's programs and 35 doctoral programs available at UCSB. Participants in the Postgraduate Study program gain technical, educational, and professional expertise for career advancement while working closely with the University's world-class faculty in state-of-the-art facilities. To be selected, individuals must meet minimum requirements and be able to demonstrate evidence of language ability in English (usually through required test scores in TOEFL, Michigan Test, TOEIC, or Cambridge Certificate of Advanced English).

Information on the Postgraduate Study program and program applications are available at the International Programs office, 320 Storke Road, Goleta, CA 93117. Telephone: (805) 893-8383. Facsimile: (805) 893-8427. E-mail: intlprog@xlrn.ucsb.edu. Web site: www.xlrn.ucsb.edu/ip.

Financing Graduate Education

UCSB provides three main types of support for graduate students: fellowship or merit based support; academic appointments, which provide either departmental teaching or research assistantships; and need-based support which is offered through the Financial Aid Office.

All domestic graduate students at UCSB are required to file the Free Application for Federal Student Aid (FAFSA) by the March 2 deadline to be considered for most of the student support funds. Website: www.fafsa.ed.gov. The FAFSA is used to compile a "need analysis" which is used in the determination of all financial support packages. The Graduate Division frequently uses University need-based moneys to fund merit-based awards.

UCSB Fellowships

UCSB offers a variety of centrally administered fellowships for both new and continuing gradu-

ate students. Awards are made to students on the basis of academic merit and promise of productive scholarship. These fellowship packages are intended to advance the goals of increased excellence and diversity of the graduate training programs at UCSB. Some fellowships are multi-year packages that include a combination of fee and nonresident tuition payment, stipend support, and academic apprentice positions. Other fellowships are single-year packages that include stipend and fee payment. Additionally, various fellowships are available to provide support for travel or research costs, payment of in-state fees, and support for students who are in the final stages of their dissertation preparation.

Some fellowships are restricted to doctoral or MFA candidates, whereas others are awarded to both master's and doctoral students. Some fellowships are restricted to U.S. citizens and permanent residents, whereas others are available to international students as well. A complete list of fellowships for both new and continuing students, along with a description of each support package, is available on the Graduate Division's web site at www.graddiv.ucsb.edu under the Financial Support heading.

In addition to the centrally administered fellowships, academic departments have their own funds available that they may use to recruit excellent new students, and support continuing students. Departmental fellowship support can be in the form of fee payment, nonresident tuition payment, and stipends. Students should consult their academic department for additional information.

Fellowships for New Students

Incoming students indicate on the application for admission whether or not they are interested in being considered for fellowship support.

All candidates are nominated directly by the academic department. A multi-disciplinary faculty committee makes awards. The award committees look at the departmental ranking of each nominated candidate, GPA, GRE scores, letters of recommendation, and each candidate's statement of purpose. All fellowship awards are very competitive.

To be eligible for fellowship awards, students must have filed their application for admission, all supporting documents, and the FAFSA by January 15 or the stated deadline for their department, if earlier.

Fellowships for Continuing Students

UCSB offers a variety of fellowships to continuing students in an effort to provide support at the various stages of a graduate education. Students may apply directly for some of these awards, while departments must nominate their students for others. To be eligible for these fellowships, students must be registered and in good academic standing for at least three quarters in their graduate program at UCSB.

Multi-disciplinary faculty committees select award recipients. Committee members will review several measures of academic success and merit such as: letters of recommendation; UC GPA; timely progress toward the degree; evidence of scholarly production such as publication of original research in scholarly journals, presentation of research at scholarly meetings, or musical performance in public settings. All award selection processes are very competitive. Students are encouraged to apply for all fellowships for which they are eligible.

Student Appointments

Students may seek either academic apprentice appointments or part-time University staff positions. Graduate students may work up to fifty percent time during the academic year. Apprentice personnel positions provide training for future careers in academic settings and are the largest source of graduate student support on campus. Graduate students may be appointed to a variety of apprentice titles. Students apply directly through their departments for academic apprentice appointments and through the Campus Learning Assistance Services for additional positions. A full teaching assistant position pays a salary plus health insurance and partial payment of fees. Teaching assistant, teaching associate, reader, tutor, and graduate student researcher (GSR) positions of at least 25% pay a salary plus health insurance and partial payment of fees. A GSR appointment of at least 35% provides a monthly salary plus the payment of fees, health insurance, and nonresident tuition if necessary.

Many part-time University staff positions are also available on campus. Jobs are listed at the University's Counseling and Career Services Office and at the Human Resources Office. The Financial Aid Office has information regarding work-study positions.

Need-Based Financial Support

Graduate students may apply for a variety of need-based awards including work-study and loans through the Financial Aid Office. Students must file the FAFSA (Free Application for Federal Student Aid) each year and provide the Financial Aid Office with supplemental information as they request it. Questions about need-based aid should be addressed directly to the Financial Aid Office, UCSB, Santa Barbara, CA 93106-3180. Telephone: (805) 893-2432.

Extramural Funding

There are numerous extramural fellowships available. In addition to gaining funding for graduate school, graduate students should be encouraged to conduct a search of extramural funding resources as part of their professional training for life in academia. We recommend that the funding search begin with the student signing up for a U-Mail account (at https://secureweb.umail.ucsb.edu/myaccount/activate) to get access to the Internet and the World Wide Web. Once the student has gained access to the Internet, he/she should visit the Graduate Division's electronic funding newsletter, *The $ource*, located at www/graddiv.ucsb.edu/Source. *The $ource*—created specifically for UCSB graduate students by the financial support section of the Graduate Division—provides links to financial support information, regularly updated listings of campus competitions and deadlines, national fellowship announcements, and links to various funding sources and databases. Also included is a link to the Illinois Researcher and Information Service (IRIS), an extramural funding source database with search capabilities along with instructions of how to conduct a search.

The reference section on the first floor of the Davidson Library can provide a variety of directories describing sources of funding and research opportunities including fellowships, grants, internships, and jobs. Several useful references on proposal and resume preparation are also available.

For information on any aspect of graduate student support, email the Graduate Financial Support Section at: financial@graddiv.ucsb.edu.

Student Services and Activities

Various services and activities are available to UCSB students, including academic counseling, personal counseling, career planning, health care, services to international students, services to students with disabilities, athletic and recreational activities, and numerous student organizations.

Additional information about the services and activities described below may be obtained directly from the appropriate office.

Student Services

Academic Advising

Many sources of academic advising are available to students at UCSB. Each college provides advice to its students on matters such as major selection, program planning, academic difficulties, degree requirements, and petitions for exceptions to requirements. Undergraduate and graduate advisors are available in each major department to assist with decisions about majors, careers, and graduate schools. An honors advisor assists students who wish to participate in the College of Letters and Science Honors Program. Telephone: (805) 893-3109.

Pre-professional advising is available in the College of Letters and Science for students considering careers in business administration, dentistry, law, nursing, physical therapy, speech therapy, and veterinary medicine. General information is also available to students interested in other professional areas such as architecture, journalism, and social work. A health professions advisor (telephone: 805/893-2279) offers special assistance to students who hope to attend professional school in the health sciences. Special advising services are also available to reentry and nontraditional students (telephone: 805/893-3109). Advising is available for those interested in Graduate School of Education credentials as noted below.

The credential advisor in the Graduate School of Education, Phelps Hall 2517 (telephone: 805/893-2084), holds meetings to acquaint students with the teaching credential program at UCSB. Meetings are held monthly for those interested in the M.Ed. and Ph.D. in Counseling/Clinical/School Psychology Program. Contact (805) 893-3375 for additional information.

ACCESS Cards

The ACCESS Card is a full-color UCSB Student I.D./Debit Card. It is used as proof of registration and to gain entrance into numerous student services. These include on-campus dining commons, library, computer lab, and the Recreation Center. Students may opt to activate their card into a personal ACCESS Debit Account, which works like a credit card in reverse; after making a deposit, purchases are automatically deducted from the balance in the account. ACCESS is accepted at the UCSB Bookstore, most campus dining and food outlets, the Pulse Copy Center, the UCen Post Office, A.S. Notetaking, A.S. Cashier's Office, and A.S. Bike Shop. The ACCESS Card has a one-time processing fee of $12. Students may opt for a black and white UCSB Student I.D., which has limited uses and is free. Telephone: (805) 893-7141.

Campus Learning Assistance Services (CLAS)

Campus Learning Assistance Services (CLAS) helps students increase their mastery of course material through course-specific tutoring and academic skills development. CLAS provides small group tutoring in a wide range of lower-division math, science, and engineering courses and limited service in social science, humanities, and first-year foreign language courses. Workshops are offered throughout the year on notetaking, time management, reading, exam prep, memory and concentration, and other study skills to assist students in developing their academic skills. Students can also receive one-to-one writing assistance with writing assignments or projects. The CLAS drop-in labs for math and science, composition, social sciences, foreign language, and English as a Second Language are open daily with many of the services extending into the evening hours. CLAS administrative offices and sign-up areas are located in Building 477 in the Student Services Complex. Telephone: (805) 893-4248. Web site: www.clas.ucsb.edu.

Computing Services

GOLD System. The GOLD System (Gaucho On-Line Data) enables students to search for open classes by instructor, day and time, requirements satisfied, etc.; change their addresses; view registration information including class schedule, grades, and RBT appointment times;

check fees and financial aid information; and order official transcripts. The GOLD System is accessible from the UCSB Homepage at www.ucsb.edu.

NetStations. UCSB has made a major investment of time and resources towards the creation of "NetStation" terminals that students can use from various locations around the campus. NetStations provide two basic services: access to student records through the GOLD System; and access to a variety of other computer-based systems such as electronic mail and library catalogs.

Open Access Computing. Drop in, open access computing is allowed in the Open Access Lab, Phelps 1529. Please call (805) 893-8414 for a recorded message of open times. Workshops are offered throughout the year to introduce new users to computers and new applications. Any questions should be directed to an Open Access consultant. Office: Phelps 1521, general information, (805) 893-3002; schedule information (24 hours); (805) 893-8414.

Free e-mail accounts are provided to all UCSB students by Instructional Computing. U-Mail, the student e-mail service, supports a number of popular mail programs. U-Web, the student web publishing service, offers web space for personal homepages. E-mail orientation classes are provided quarterly to introduce new students to electronic communication technologies. For further information or to activate your account, visit the U-Mail Help Desk in Phelps 1523 or call (805) 893-5542.

Registration by Telephone (RBT). RBT is a voice response computer system that allows students to use their touch-tone telephone as a computer terminal. Students use RBT to register for classes, listen to grades or their current class schedule, request an unofficial transcript or grade mailer, declare candidacy for an undergraduate degree, make commencement reservations, and perform other routine tasks related to registration.

Counseling and Career Services

Counseling and Career Services helps students achieve their personal, social, academic, and career goals. Confidential services, provided by professionals (or peers when appropriate), are free to all registered students. Counseling services include individual counseling, groups and workshops, behavioral self-help, stress management, and crisis counseling.

Career Planning Services offers career advising, career testing, career groups and workshops, and information about careers and graduate and professional schools and programs through Career Resources available in both print and internet formats.

Career Employment Services advises students about work opportunities; provides information about resumé writing, interview techniques, and job search strategies; coordinates on-campus interviews with employer representatives; and assists advanced-degree and credential candidates in education through the Educational Reference Service. Local, state, national, and international internship information, advice, and placements are arranged through the Internship Program; part-time and seasonal job listings are accessed on the 24-hour Jobsline.

Offerings of workshops, courses, and resources are designed to help students gain the skills and information needed for life success.

Services are available in Building 599 as well as online. Telephone: (805) 893-4411. Websites: career.ucsb.edu or counseling.ucsb.edu

Dining Services

Dining commons are located near each residence hall. Residents are offered a choice of meal plans with their room contracts. Students who live off campus may purchase meals in the campus dining commons, either on a per-meal basis, or through a quarterly contract. Contract arrangements may be made through the Dining Services office. Telephone: (805) 893-3093.

A gourmet coffeehouse, delicatessen, pizza and pasta restaurant, soup and salad bar, and convenience store are located on the main floor of the University Center (UCen). On the lower level are Wendy's, Panda Express, and Chilitos, which serves Mexican food. All UCen dining facilities are open weekdays, some late into the night, and several are open weekends. In addition to those located in the UCen, there are several dining facilities on campus, including two convenience stores, three gourmet coffee and bakery carts, a grill cart, and a cafe. The Arbor, a convenience store located near the library, is open seven days a week and most evenings. ACCESS cards are accepted at all locations. Telephone: (805) 893-3773.

Disabled Students Program

The Disabled Students Program (DSP), Student Affairs and Administrative Services Building (SAASB) 1201, assists students with temporary or permanent disabilities who have special needs related to campus life and the completion of a university degree program. The DSP provides interpreters, note takers, readers, mobility assistance, advising, and referrals. An inventory of adaptive equipment is available for use by eligible students. Telephone: (805) 893-2668, V/TDD. Web site: www.sa.ucsb.edu/dsp.

Education Program for Culture Awareness

The Education Program for Culture Awareness (EPCA) assists in building a campus community committed to exploring issues and perspectives related to cultural diversity. Programs are designed to generate discussion, raise awareness, increase sensitivity, and promote understanding among and between different groups/individuals so that all members of the campus population feel accepted, welcomed, and appreciated. EPCA has produced the "To Be..." series of videos documenting the experiences of students of color, disabled students, and gay/lesbian/bisexual students at the UCSB campus. EPCA staff can assist departments, organizations, and student groups in planning educational programs about diversity issues as well as provide interactive exercises, videos, and other media resources, and trained facilitators to lead discussions about cultural diversity. The EPCA lending library includes books, videos, and diversity training kits. EPCA is continually in the process of training volunteers and welcomes expressions of interest by students, staff, and faculty. The office is located in MultiCultural Center 1530D. Telephone: (805) 893-8386.

Educational Opportunity Program (EOP)

EOP counselors assist students over the course of their undergraduate careers in clarifying and addressing their academic, personal, career, and financial concerns. They assist students in their negotiations with the institution and act as intermediaries, when necessary. This process for entering freshmen begins with the Summer Transitional Enrichment Program (STEP), a two-week in-residence experience. STEP participants receive English and math instruction, take an additional academic class, and enroll in an affective skills course that focuses on time management and understanding the university system. The Program Of Determined Students (PODS) is designed to provide freshmen with on-going support through learning groups that have an academic discipline and a career exploration focus.

The Continuing Student Services Program (CSSP) targets students who are beyond their freshman year, assisting new transfer and reentry students in their transition to the University and helping students develop an academic plan at each respective class level. CSSP assists students in preparing for their post graduation plans, including preparation for entering the job market or graduate school. To assist students with their personal goals, EOP counselors are available to mentor students as well as offer academic and career advising, referrals, and information about support services available on campus and in the community. For further information about these services, please contact EOP at (805) 893-3235 or visit our EOP offices located in Building 434 and Building 406.

Graduate Students Association

The Graduate Students Association (GSA) represents all UCSB graduate students. GSA is governed by an elected seven-member executive council which meets weekly, and an elected general council of graduate student departmental representatives whose monthly meetings are open to all members. GSA executive council members sit on and appoint students to various university committees. GSA also distributes a monthly newsletter, and schedules a variety of activities for graduate students. The GSA Lounge (UCen 2502) is open weekdays from 10 a.m. to 4 p.m. Free bagels and coffee are provided weekly, making it a congenial location for graduate students to unwind or study. In addition, the lounge is available to student groups who would like a place to meet. Further information is available from departmental graduate assistants, the GSA web site at www.gsa.ucsb.edu, or the GSA office, UCen 2502. Telephone: (805) 893-3824. E-mail: gsa@gsa.ucsb.edu.

Housing & Residential Services

Students at UC Santa Barbara have several choices of housing style and location, including residence halls, apartments, sorority and fraternity houses, and a housing cooperative, all of which are located on or within a mile of the campus. Detailed housing information is available on the housing web site at www.housing.ucsb.edu. The admission folder for new students also includes a housing brochure containing applications and information regarding the various types of housing available.

Nine residence halls are located on or near the campus, and space is available to accommodate all incoming freshmen. Various meal plans for "all you can eat" meals are offered in dining facilities close to each residence hall. Many single students find residence hall living an excellent opportunity to become involved with the campus community and meet other students. The contract process for all residence hall space is handled at a central campus clearinghouse, located in the Housing & Residential Services Office on Channel Islands Road. Telephone: (805) 893-5513.

Students must have turned in their Statement of Intent to Register (SIR) and the Residence Hall Application Card (or on-line application) by the stated deadlines in order to qualify for the computerized process of being placed in university-owned or university-affiliated residence halls. Newly admitted freshmen will be placed in their preferred residence hall as space permits.

The Community Housing Office, located in the University Center, room 3151, serves as a one-stop resource for rental housing information and referrals. It is recommended that transfer and graduate students start their housing search here. Telephone: (805) 893-4371.

The Office of Apartment Living, located in the Santa Ynez Apartment complex on El Colegio Road, provides university-owned single and family student apartment information. University-owned apartment rentals are primarily for continuing upper-division (juniors and seniors) and graduate students. Students who have a spouse and/or legal dependent(s) living with them will find the family student apartment environment suited for them. Family student apartment contracts staff can be reached at (805) 893-4021. Single student apartment contracts staff can be reached at (805) 893-3640.

Campus Conference Services, located in the Santa Rosa Administrative Center, provides information about the use of Housing & Residential Services' conference facilities and services in the summer for organizations with educational objectives. Telephone (805) 893-3072.

The Office of Residential Life, Trailer 335, assists students who live in the university-owned residence halls and serves as the university liaison for students in the three university-affiliated residence halls. Students may seek assistance and support from the professional staff regarding housing, academic, personal, and social development matters. The residential education program provides a quality living experience as well as opportunities to interact with faculty and staff. The program sponsors academic classes, educational programming, interest halls, Residence Review Board, and the Residence Hall Association. Telephone (805) 893-3281.

Office of International Students and Scholars

The Office of International Students and Scholars, Building 434, provides academic and personal counseling and assistance to international students. Every nonimmigrant student is required to report to the office; students should bring passports and visa documents with them. The office conducts an orientation program at the beginning of the fall quarter and provides information about registration, immigration,

and academic and other requirements that will affect the international student's stay at the university. Telephone: (805) 893-2929. Web site: www.oiss.ucsb.edu.

MultiCultural Center

Since 1987 the MultiCultural Center (MCC) has pursued its mission of promoting cultural awareness and understanding, creating an environment that will foster a sense of belonging among students of diverse cultures as well as international students at UCSB, and serving as a setting for meaningful cross-cultural interaction.

Located in the University Center, the MCC provides a lounge and gallery, meeting rooms, office space, and a 150-seat theater. Over 80 registered student groups use the Center.

In its quest to promote cultural awareness and understanding, the MCC offers a broad spectrum of events including lectures, panel discussions, films and videos, poetry readings, art exhibits, and musical, dance, and dramatic performances, all of which are open to the general public. Additionally, the MCC lounge provides a comfortable space conducive to studying, relaxation, and interaction.

Students, staff, faculty, and the community are invited to visit the MCC and to take advantage of its many free programs. The MCC is located in the east end of the University Center, and is open Monday through Thursday from 8 a.m. to 10 p.m. and Friday from 8 a.m. to 5 p.m. Telephone: (805) 893-8411.

Ombuds Office

Ombuds serve as troubleshooters for students, faculty, and staff members whose problems have not been resolved by other agencies. The office is located in the Student Affairs and Administrative Services Building (SAASB) 1207. Telephone: (805) 893-3285.

Orientation

New undergraduate students and their parents are encouraged to attend a one- or two-day orientation program offered at various times during the summer and prior to the start of each academic quarter in conjunction with the Colleges of Letters and Science, Engineering, and Creative Studies. Orientation participants have the opportunity to meet faculty, deans, staff, and students; to learn about student services, academic offerings, and enrollment procedures; and to register for courses. During the summer, participants stay in university residence halls and have meals in the dining commons. For new undergraduates not attending orientation, and for all new graduate students, orientation meetings are held during pre-instructional activities at the beginning of each quarter. Details are available in the *Schedule of Classes.* Orientation Programs also offers a variety of activities each fall for new and returning students. Telephone: (805) 893-3443. Web site: www.sa.ucsb.edu/orientation.

Parking and Transportation Services

Parking Regulations & Permits. UCSB parking permits are required on all vehicles parked on campus during regular business hours (6:30 a.m. to 5:00 p.m., Monday through Friday).

Permits are not required in most "A," "S," and "C" lots on weekends (from 5:00 p.m. Friday to 6:30 a.m. Monday), and on university administrative holidays.

Parking at UCSB is not assigned. It is provided on a "first-come, first-served" basis. Faculty, staff, and students may park in "A," "S," or "C" lots with the appropriate permit. They are not eligible for visitor parking.

Short-term permits (such as daily, 3-hour, and 30-minute) are sold at campus entrance Kiosks, Mesa parking structure entrances, and at the Parking office.

Long-term permits (such as annual & quarterly) are sold only at the Parking office.

Valid parking permits are required in all Time Zones from 6:30 a.m. to 5:00 p.m., Monday through Friday. This includes the Time Zones in front of on-campus residential halls. Vehicles may only park for 30 minutes in Time Zones. NOTE: Even though a parking permit is not needed after regular business hours, vehicles may still only park for 30 minutes in Time Zones. This time limit is enforced 24 hours/7 days per week.

Valid parking permits are required at all times (24 hours/7 days per week) in areas marked "Enforced 24-hours", "Enforced at all times," "Reserved," and "Restricted." This includes:

- Service Areas marked 24 hours
- Restricted Service Areas
- Accessible (disabled) spaces — (a DMV-issued placard is also required)
- West Campus/Devereux Loop
- Lot 2 (the B-1 residential lot)
- Lot 3 (North-West quadrant of the lot, closest to library)

A valid parking permit is one which (a) has not expired, (b) is displayed properly (in the lower left corner on the inside of the front windshield), and (c) is used to park in a space designated for that specific type of permit.

Permit Eligibility. Because parking on campus is extremely limited, students living within approximately two miles of UCSB (including Francisco Torres, Isla Vista, and university-owned off-campus housing) are not eligible to purchase a parking permit. Students living outside the 2-mile limit may purchase a "C" permit, and may only park in lots designated with a "C."

Residential verification requirement. Verification of local residential address, such as a current housing lease agreement, is required in order to purchase an annual or quarterly student parking permit. At the time of sale, the student will be asked to supply proof of local living address, such as a current housing lease agreement, bill, or BARC statement.

A limited number of parking permits are sold to on-campus, residential students. Residential parking permits and lot assignments are awarded by lottery, with no guarantee that all requests can be accommodated.

Parking Meters. Parking permits are not valid in metered spaces. (Even with a parking permit, coin payment is still required.) Depending on the lot, the maximum time varies from 45 minutes to 4 hours. Meters only accept quarters. One quarter provides 15 minutes worth of parking in all meters.

Transportation Alternatives Program (TAP). Are you willing to commute to campus by bike, bus, carpool or vanpool? If so, TAP will provide you with up to six days of free parking per quarter as an incentive for doing your share to clear the air. TAP is open to all graduate students and UCSB employees and all undergraduates who live outside a two mile radius of campus. TAP also offers free bike maps of the county and free carpool matchlists for those interested in forming carpools. Those who create three person carpools qualify for specially reserved parking spaces in select lots around campus; this is very handy in lots where there is a shortage of parking. TAP also coordinates vanpools serving Santa Maria, Lompoc, the Santa Ynez Valley, Carpinteria, Ventura, and Camarillo. UCSB students may ride the city buses, at no additional cost, just by showing their student I.D. Bus schedules can be obtained from any MTD bus or from the TAP office. To learn more, sign up, save money on parking, and do a world of good visit us on the web: www.park.ucsb.edu, or call (805) 893-5475.

Campus Liability. Individuals park on campus at their own risk. Please lock your vehicle. The University of California shall not be liable for any risk or loss of, or damage to, property of individuals, including vehicles or the contents therein, which may result from the use of campus parking services or facilities.

Additional information on UCSB parking rules and regulations may be obtained from Parking and Transportation Services at (805) 893-PARK (893-7275) or on our web site at ucsbuxa.ucsb.edu/BusServ/park. For information on current parking fees, see "Fees."

Peer Services

Many students at UCSB provide services to fellow students in exchange for work experience and either academic credit or a stipend. Peer service opportunities include work as residence assistants and housing advisors, counseling and career peers, peer health educators, veterans' affairs advisors, Financial Aid peer advisors, and academic peer advisors in the College of Letters and Science.

Additional opportunities exist in the Community Service Organization, a civilian extension of the campus police department; the EOP office; the Women's Center; Orientation Programs; and the rescue team.

Student Grievance Procedures

UCSB is in compliance with all legislation that seeks to eliminate discrimination toward students on the basis of race, color, national origin, religion, disability, sex, sexual orientation, or age. (Sexual harassment is considered to be a form of sex discrimination.) Students who wish to file a grievance arising from alleged discrimination must do so at the Office of the Vice Chancellor for Student Affairs, Cheadle Hall 5203. An outline of formal student grievance procedures is contained in the Appendix. Sexual harassment complaints may be filed with the Sexual Harassment Complaint Resolution Officer, Paula Rudolph, 2121 Cheadle Hall. Telephone: (805) 893-2546.

Student Health

Medical Evaluation Information

A new student or a student returning after an absence from any UC campus of a year or more is asked to submit a completed form showing immunization status and insurance information. (This form is sent to the student's permanent address during the initial registration process.) Measles, mumps, rubella, and all other childhood immunizations should be completed and up-to-date prior to entering the university. It is recommended, although not required, that each student have a physical examination and a report of a tuberculin skin test or chest x-ray within one year prior to the first day of classes at UCSB. All intercollegiate athletes are required to have a physical examination at the SHS prior to participation. International students and students born outside of the United States must provide TB clearance. This can be obtained at SHS during the first two weeks of the quarter.

If you have withdrawn for medical reasons and are returning after an absence of less than one year, request that your personal physician send a letter to the Student Health Service indicating that your health is improved enough to continue your studies. This letter should include any recommendations regarding limitations of physical activities, etc.

Medical Services For Enrolled Students

Student Health hours are 8:00 a.m.-4:30 p.m., Monday through Friday. We are located across from the Events Center, between the residence halls and Isla Vista making it easy to access health care on campus. We have our own parking lot with plenty of student parking (C sticker required) as well as metered parking available.

We offer full-service primary care as well as limited specialty care. The following are some of our services available: urgent care, same-day appointments, women's health (including annual exams), internal medicine, psychiatry, rheumatology, podiatry, orthopedics, pharmacy, laboratory, x-ray, physical therapy, allergy shots, immunizations, travel medicine, wart removal, HIV testing, minor surgery, accutane therapy, health advising (alcohol & other drugs, nutrition, stress management, eating disorders, sexual health), and physicals.

Eye and/or Dental care are provided on a fee-for-service basis. Please call these two clinics directly for fee information and appointments: Dental - (805) 893-2891; Eye - (805) 893-3170.

Student registration/health fees support some services, but there are still additional charges for these services. Call (805) 893-8141 for specific information regarding fees. If you have health questions and would like information or need help scheduling an appointment please call the Nurse Advisor at (805) 893-7837.

In the event of an emergency, students should go directly to one of the local community hospitals, urgent care centers, etc. Students should expect to use their private medical insurance to cover expenses. If you need emergency transportation, call the Campus Rescue Squad at 9-911. There is a charge for this service.

Important Note: SHS is not equipped to handle life-threatening emergencies and does not provide complete 24-hour coverage. It also does not provide specialty care in many areas. Therefore, any accidents or illnesses which cannot be handled by SHS will be referred to local hospitals, facilities, or physicians. All costs incurred will be at the student's expense. Be sure that you have adequate health insurance coverage. For information on university-sponsored health insurance, call the Student Insurance Office at (805) 893-2592.

Payment Options

There are two options available to undergraduate students:

1. Students can pay as they go. We accept cash or checks (made out to U.C. Regents) or we will bill charges to their BARC account. Visit fees range from $20-25 per visit, lab processing fees are $10/day and x-ray processing fees are $15/day. There are additional charges for other services.

2. Students can pre-pay for health care through a program called PATH (Prepaid Access To Health care). For $180/year (including summer) or $70/quarter students do not have to pay the visit or processing fees each time they come to Student Health. These fees are included in PATH. Additional information is available on the Student Health web site at: www.sa.ucsb.edu/studenthealth.

Office of Student Life

The Office of Student Life, Student Affairs and Administrative Services Building (SAASB) 2201, houses the Office of Dean of Students and provides a centralized location for students to access multiple services. Trained staff address a wide variety of student needs and concerns.

Services include general assistance with problem-solving and referrals, personal emergencies, letters of recommendation, and administrative withdrawals. The Office of Student Life also plans and schedules many co-curricular activities and educational programs. The staff assists organizations with leadership training and development, program planning, fund raising, trustee accounts, publicity and promotion, and special projects. The Office of Student Life provides an organization directory on the web at www.sa.ucsb.edu/campusorgs/, which lists purposes and contacts of over 250 campus organizations. If students do not find an organization that interests them, the staff can help them to start one.

The protection of scholastic integrity and the prevention of academic dishonesty are fundamental to the mission of the Office of Student Life. The office provides education about the enforcement of general campus regulations including various forms of discriminatory harassment. The office works to foster interaction among students, campus organizations, the University, and the local community. Telephone: (805) 893-4550 or (805) 893-4569. Web site: www.sa.ucsb.edu/osl.

UCSB Achievement Program

The UCSB Achievement Program sponsors various activities to increase access and provide support for students interested in the physical and life sciences, engineering, and the mathematical sciences. Academic workshops are offered each quarter of the academic year for students enrolled in key science, engineering, and mathematics courses. These workshops bring small groups of students together with graduate and undergraduate Achievement Program staff to focus on attaining a high level of success in their coursework. During the academic year and summer, selected students receive support to carry out advanced independent projects under the direction of UCSB faculty. In order to get the experience and skills needed for advanced work, eligible students with little or no research experience can apply for an apprenticeship to work on a team project led by a graduate student.

The Summer Institute in Mathematics and Science, an intensive three-week in-residence experience, is offered in collaboration with the EOP/Summer Transitional Enrichment Program (STEP) to entering freshmen with strong high school preparation in the sciences and mathematics.

The Achievement Program Center is located at South Hall 4631. Telephone: (805) 893-7125. For more information, students should call (805) 893-8801. Web site: www.math.ucsb.edu/~map.

University Children's Center

The University Children's Center, located on West Campus, serves the child-care needs of students, faculty, and staff. The center is accredited by the National Academy of Early Childhood Programs and provides a high-quality child-care program for children three months to eight years of age in full- and half-day placements. Tuition varies depending on the age of the child and the number of days and hours in attendance. California State Department of Education grants are available to subsidize tuition costs for low-income families. In addition, the center participates in the Federal Food Program, which provides nutritious meals to children whose families are income eligible. The center is open Monday through Friday from 7:30 a.m. to 5:30 p.m. For information and to place a child's name on the waiting list, please call the Children's Center. Telephone: (805) 893-3665.

Veterans Benefits Assistance

The Financial Aid Office verifies enrollment for veterans and their dependents in order to issue the appropriate educational benefits. For more information, contact the UCSB Financial Aid Office, SAASB 2103, Santa Barbara, CA. 93106-3180 or call (805) 893-2432.

Veterans and their dependents must contact the Financial Aid Office prior to registration to obtain information regarding fee waivers and other educational benefits.

Offices of the United States Department of Veteran Affairs are located as follows: Regional Office, 211 Main St., San Francisco, CA. 94105; Regional Office, 11000 Wilshire Boulevard, Los Angeles, CA. 90024; and Regional Office, P.O. Box 639012, San Diego, CA. 92163-9012.

Information on the State of California educational benefits is also provided by the California Department of Veterans Affairs; Division of Veterans Services, P.O. Box 942895, Sacramento, CA 94295-0001, and by county offices.

If you are receiving a California Veterans Tuition Fee Waiver during the 2000-2001 academic year, please contact the Financial Aid Office if you want to activate your eligibility for Summer Session.

Women's Center

The Women's Center's goal is to challenge barriers that inhibit women's development through education, research, and advocacy. To this end, the center provides lectures, workshops, and films for all students, faculty, staff, and members of the community. In addition, the center provides an extensive library; a women's art gallery; rape and sexual harassment prevention education programs; counseling and consultation services for individuals and groups; services for re-entry and transfer students, and queer students; and opportunities to meet with scholars, activists, artists, and writers in a comfortable, inviting place. The center is located in Building 434. Hours: 10:00 a.m. to 5:00 p.m. Telephone: (805) 893-3778.
Web site: www.sa.ucsb.edu/women'scenter.

For more information on lesbian, gay. bisexual, transsexual, or coming out issues, please visit the Queer Resource Center, University Center Room 3137. Hours: 10:00 a.m.-5:00 p.m. Telephone: (805) 893-5846.

Student Activities

UCSB students have the opportunity to participate in 300 student organizations. A complete list of all organizations is available in the Office of Student Life, Student Affairs and Administrative Services Building (SAASB) 2201. Some of the opportunities available to students are described below.

Alumni Affairs

The Department of Alumni Affairs and the UCSB Alumni Association provide services to current students as well as to alumni. Students can join the Student Alumni Association to participate in career conferences and other programs that connect students with alumni and career options. The Association's Family Vacation Center hires UCSB students as summer staff. The Jack Kinney internship in Alumni Relations provides work experience in the field. An emergency loan program assists students in financial need. Alumni Association programs such as chapters, awards, reunions, the Family Vacation Center, the quarterly magazine *Coastlines*, and career services seek to keep alumni involved with UCSB. Telephone (805) 893-2288, or visit the Alumni Association Homepage at www.instadv.ucsb.edu/alumni.

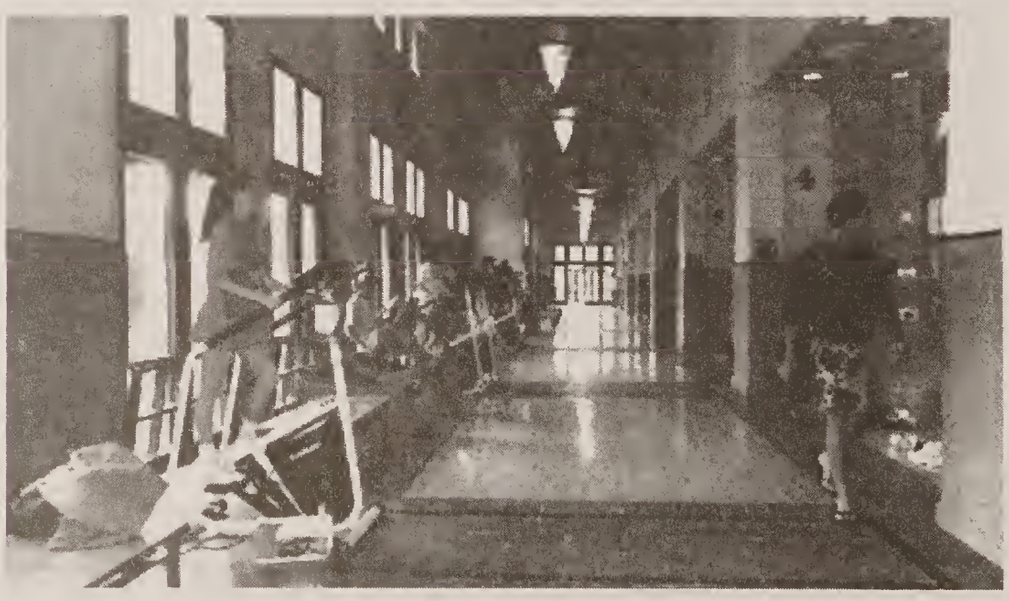
Associated Students

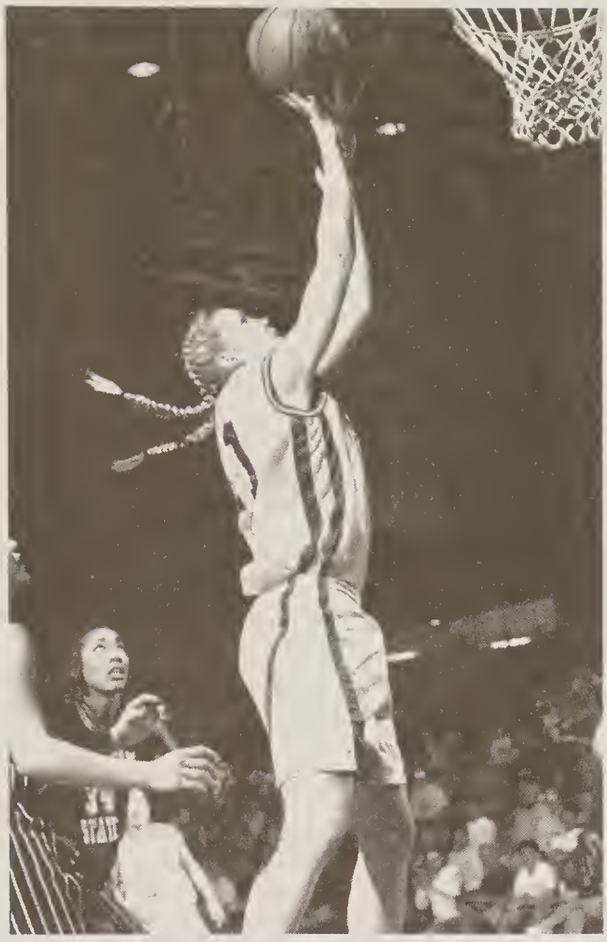
Associated Students (A.S.) serves as the official undergraduate student government and provides services, employment opportunities and leadership experience. Every undergraduate student is a member upon payment of required quarterly registration fees. A.S. Executive Officers and Legislative Council members, elected annually each spring, represent students and transmit student concerns to the campus administration and academic senate as well as to the appropriate offices within and outside of the UC system. A.S. provides avenues for student involvement not only through elected positions, but also through boards and committees that address a broad range of issues: environment, women/gender, academic affairs, investments, concerts and events, community service, lobbying, and radio broadcasting.

Associated Students services include A.S. Notetaking and Publications, A.S. Ticket Office, A.S. Cashiers, A.S. Bike Shop, A.S. Legal Services, and the A.S. Short Term Student Loan Program.

Students are invited to stop by the Associated Students offices housed in the University Center. Telephone: (805) 893-2566.
Web site: www.as.ucsb.edu.

Community Affairs Board. Through the AS/UCSB Community Affairs Board (CAB), students can find out about campus and community volunteer opportunities, nonprofit agency orientation/training, and one-time community service events. Located in the University Center, UCSB's Volunteer Action Center houses over 400 volunteer opportunities for students to ex-





UCSB's Volunteer Action Center houses over 400 volunteer opportunities for students to explore career options, create social action, and gain practical experience. CAB connects students to local nonprofit and human services agencies such as the Family Literacy Program, Special Olympics, Big Buddies, HelpLine, and Transition House. Members of CAB fill leadership positions and gain valuable practical experience in the areas of public relations, community outreach, financial management, fundraising, and volunteer/nonprofit management. For more information, please call (805) 893-2496 or stop by the CAB office in UCen 2523.

Program Board. Associated Students Program Board presents a wide variety of educational and cultural events including lectures, concerts, films, sneak previews, Storke Plaza events, and an annual spring *Extravaganza*. Students involved in Program Board gain experience in planning and organizing events, managing budgets, negotiating with agents and promoters, running technical equipment, and working with campus and community officials. Program Board members provide leadership to other campus organizations with event planning assistance and gain firsthand experience with the entertainment industry. Program Board also provides job opportunities for students as ushers, production crew, and promotion assistants. Telephone: (805) 893-3536.

Student Media. UCSB student publications include the student newspaper (*Daily Nexus*), yearbook (*La Cumbre*), literary magazine (*Spectrum*), journal of undergraduate research (*Discovery*), journal of graduate research (*Thresholds*), and arts magazines (*Campus Point* and *Experimental Thinking*). UCSB also has a radio station, KCSB-FM and KJUC-FM Cable. Further information about student media is available in the Storke Publications Building and in the Associated Students main office.

Fraternities and Sororities

UCSB hosts over 30 Greek-letter organizations comprised of national and local/regional sororities and fraternities, many of which maintain chapter houses in the student community of Isla Vista. The organizations offer their members leadership, scholarship, community service, and friendship opportunities through participation in a number of on- and off-campus activities. For more information on Greek life, contact the Office of Student Life. Telephone: (805) 893-4550.

Intercollegiate Athletics

The intercollegiate athletics program at UCSB offers 11 varsity sports for men (cross-country running, water polo, soccer, basketball, swimming and diving, track and field, baseball, golf, gymnastics, volleyball, and tennis) and ten for women (tennis, volleyball, swimming and diving, track, gymnastics, cross-country running, softball, basketball, water polo, and soccer).

All of UCSB's intercollegiate teams compete at the Division I level in the NCAA, where many attain national prominence. Telephone: (805) 893-8613. (See Appendix for Intercollegiate Athletics Mission Statement.)

Physical Activities and Recreation

The Department of Physical Activities and Recreation offers a year-round program of academic classes and sports-related activities, which meet the needs of students at all ability levels, including the physically challenged. Academic programs include Physical Education minors in Athletic Coaching, Exercise and Health Science, Fitness Instruction, and Sport Management and a curriculum of basic physical education instruction. Recreation offers an Adventure Program, Rec Sports (eighteen Sport Clubs, Intramural Sports), and a variety of open recreational opportunities.

The Recreation Center, which includes an aquatics complex, two fitness centers, racquetball and squash courts, as well as two gymnasia, is available for daily use. Additional facilities include a campus swimming pool, Robertson Gym, ropes course, climbing wall, aerobics studio, gymnastic area, sailing center, and 24 tennis courts.

Each quarter the department publishes the *Leisure Review*, which contains a variety of activities including pottery, stained glass, ballet, swing and ballroom dancing, yoga, wine tasting, massage, guitar, and sailing, among others. Telephone: (805) 893-3738 or (805) 893-2181. Web site: www.par.ucsb.edu.

Residence Halls Association

The Residence Halls Association (RHA), located in the San Nicolas Residence Hall lobby, is the governing body of and for students living in university-owned residence halls. RHA coordinates social, educational, and multicultural activities for students living in the residence halls. For event information or to speak with board members, call the RHA Office: (805) 893-4877. Web site: www.resnet.ucsb.edu/RHA.

University Center (UCen)

The UCen is the focal point for student activities on the UCSB campus. Located within the UCen are the UCSB Bookstore, six dining facilities, a coffee house, a convenience store, a U.S. Post Office, the UCen Cashier, a copy shop, a travel agency, meeting rooms, the Corwin Pavilion Conference Center, a video game room, pool tables, and multiple TV monitors. The UCen also houses Associated Students, Graduate Students Association and Lounge, the MultiCultural Center and Theater, the Community Housing Office, and student organization offices. Web site: www.ucen.ucsb.edu.

Fees, Expenses, and Financial Aid

Billing Office, Student Affairs and Administrative Services Building (SAASB) 1212; Telephone (805) 893-2155

Financial Aid Office, Student Affairs and Administrative Services Building (SAASB) 2103; Telephone (805) 893-2432

The exact cost of attending the University of California, Santa Barbara will vary. Generally, however, the total undergraduate costs, including fees, books and supplies, transportation, and personal expenses for three quarters on campus during the 2000-2001 academic year are estimated to be $14,920 for residents of California and $25,094 for nonresidents, including international students. Total graduate student costs including fees, books and supplies, transportation, and personal expenses for three quarters off campus are estimated to be $18,394 for residents of California and $28,388 for nonresidents. A detailed breakdown of estimated expenses is available upon request through the Financial Aid Office.

The university's accounts receivable billing system (known as Billing, Accounts Receivable, and Collections, or BARC) consolidates debts owed to the university, including fees, campus owned housing expenses, and library fines. Students receive a monthly statement of their account status whenever they have financial obligations to the university. Fee payment deadlines are published quarterly in the *Schedule of Classes*.

Qualified students are eligible for financial assistance in the form of scholarships, loans, grants, and/or work-study. For more information on UCSB financial aid, students can visit the Financial Aid Office web site at www.finaid.ucsb.edu

SUMMARY OF QUARTERLY FEES AND EXPENSES, 2000-2001

Tuition, fees, and other charges are subject to change without notice by the U.C. Regents.

	Resident Undergraduate Students	Resident Graduate Students	Nonresident Undergraduate Students	Nonresident Graduate Students
Registration fee	$238.00	$238.00	$238.00	$238.00
Educational fee	905.00	965.00	1,029.00	$1,029.00
Associated Student fee	23.75	——	23.75	——
Disabled Student Services	1.75	——	1.75	——
Intramural Sports	2.50	——	2.50	——
Graduate Student Assoc. Fees	——	9.50	——	9.50
Child Care Center fee	3.00	3.00	3.00	3.00
Student Health fee	12.00	29.00	12.00	29.00
Graduate and International Student Health Insurance*	——	289.00	——	289.00
Recreation Center/Aquatics Complex/UCen Expansion fee	44.70	44.70	44.70	44.70
Multicultural Center fee	.75	.75	.75	.75
Bicycle Path Maintenance fee	——	.75	——	.75
University Center fee	15.00	6.00	15.00	6.00
Events Center fee	4.00	——	4.00	——
Shoreline fee	3.00	3.00	3.00	3.00
Transit fee	7.50	7.50	7.50	7.50
Recreational Sports fee	7.00	7.00	7.00	7.00
Intercollegiate Athletic Scholarships	9.00	——	9.00	——
Tuition for nonresidents**	——	——	$3,415.00	$3,415.00
Total for California residents	**$1,276.95**	**$1,603.20**		
Total for nonresidents			**$4,815.95**	**$5,082.20**

* Student health insurance is mandatory for all graduate and international students.
** Graduate doctoral students see "Nonresident Tuition fee" section on this page.

Quarterly Fees and Expenses

Fee amounts are summarized in the accompanying chart. Tuition, fees, and other charges are subject to change without notice by the Regents of the University of California. Some specific fees are described below.

Registration fee

The registration fee is the same for both undergraduate and graduate students. This fee supports such student services as athletic facilities, laboratory fees, outpatient care furnished by Student Health, and counseling and placement services. This fee is charged whether or not students use these services.

Educational fee

The educational fee is paid by all students registered at UCSB to cover a variety of educational costs as determined by the regents. With the approval of the appropriate college dean, undergraduate students may obtain deficit load (or part-time) status prior to the beginning of the quarter. Approval is based upon verifiable reasons of employment, health, or family responsibility. Under certain conditions, reduced fees may be available through the Office of Student Life for undergraduate students who have advance permission to carry 10 or fewer units a quarter.

Graduate Student Health Insurance fee

All graduate students are assessed a quarterly fee for mandatory graduate student health insurance. The fee is paid by the university for teaching and research assistants who have appointments of 25% time (10 hours per week) or more. All other graduate and international students are responsible for the quarterly premium unless they waive out of the plan. The completed waiver form must be submitted to the Student Health Insurance Advisor prior to the registration fee deadline. Forms are sent to students along with insurance information and are also available at Student Health and at their website at www.sa.ucsb.edu/studenthealth. The university graduate student health insurance policy provides year-round and worldwide coverage. Contact the Student Health office at (805) 893-2592 for details regarding coverage.

University Center fee

All students are assessed a University Center (UCen) fee used to repay construction loans. Students enrolled in 5.5 units or fewer are eligible for a full refund of this fee.

Transit Systems fee

The transit systems fee provides unlimited local Metropolitan Transit District (MTD) bus service for all registered students. Students may ride MTD at no charge by showing their ACCESS card with current registration sticker.

Nonresident Tuition fee

Students who have not been classified as legal residents of California for tuition purposes are classified as nonresidents and are subject to payment of a nonresident tuition fee. Graduate doctoral students should refer to the Appendix concerning the possible reduction of the nonresident tuition fee. Regulations governing determination of residency are also outlined in the Appendix. Newly admitted and returning students are required to file a Statement of Legal Residence. Questions concerning residency classification may be referred to the Residence Deputy in the Office of the Registrar. (805) 893-3033.

Additional Fees and Expenses

Application fee

Every applicant for admission must submit a nonrefundable $40 fee with the application.

Deposit fee

A nonrefundable $100 deposit is required of undergraduates when they return the Statement of Intention to Register at UCSB. The deposit will be applied to the registration fee only if students enroll in the quarter for which they have been admitted.

Intercampus Transfer fee

Undergraduate students who wish to transfer from one UC campus to another must pay $40 with their intercampus transfer application.

Parking fees

Please note the table of parking fees currently in place for the 2000-2001 year. Fees and parking regulations are subject to change without notice. For complete information on parking permits, regulations, services, etc., see "Parking and Transportation Services" in the "Student Services and Activities" section.

PARKING FEES 2000-2001

Fees are subject to revision without notice.

Automobile
$420/year
$110/quarter
$5/day
$3/three hours
$.50/thirty minutes

Parking Meters
$.25/fifteen minutes

Motorcycle/Moped
$48/year
$1/day

Readmission fee

A fee of $40 is required when submitting an application for readmission.

Undergraduate Accident and Sickness Insurance Plan fees

UCSB sponsors an undergraduate accident and sickness insurance plan which covers certain medical services not provided by Student Health. It also provides medical protection outside the Santa Barbara area. It is highly recommended that students not covered by a private policy purchase this plan as added medical protection.

All undergraduate nonimmigrant international students are required to purchase the graduate student health insurance plan as a condition of registration. An insurance fee will be automatically assessed. Waiver forms are available if you have comparable insurance coverage. Insurance fees are subject to change without notice. Please call Student Health at (805) 893-2592 for further information.

PATH (Prepaid Access To HealthCare). As an alternative method to pay for Student Health fees, students can pre-pay a set amount (yearly or quarterly) and see a practitioner as well as utilize the laboratory and x-ray as many times as needed without paying the visit or processing fees. Prepaid services maximize preventive care and access to treatment by minimizing financial barriers. For students on financial aid, moneys are allocated for health care and can be applied to PATH. For information, call (805) 893-8141.

REFUND SCHEDULES

The refund schedules are subject to revision, including retroactive revision during the academic year, without notice by the Federal Government or the Regents of the University of California. Title IV financial aid includes Pell Grants, Supplemental Educational Opportunity Grant, College Work-Study, Perkins Loan, Direct Loans, Unsubsidized Direct Loans, and Parent Loans for Undergraduate Students (PLUS).

Schedule A

New students receiving federal Title IV financial aid who withdraw in their first quarter of attendance are eligible to receive the following percentage:*

1st day or prior	2-7 days	8-14 days	15-21 days	22-28 days	29-35 days	36-42 days	43 days or over
100%	90%	80%	70%	60%	50%	40%	0%

Schedule B

All other students (those not eligible for Schedule A refunds) are eligible to receive the following percentage:*

1st day or prior	2-7 days	8-18 days	19-35 days	36 days or over
100%	90%	50%	25%	0%

* Schedules refer to calendar days, including weekends.

Financial Aid

All students who will need financial assistance to attend UCSB are encouraged to complete the financial aid application process. Almost everyone thinks first of fees and tuition when considering the cost of a college education. But this is only part of the overall cost of attending a university. There are also living expenses, such as food, housing, books, supplies, transportation, and personal expenses. These can comprise more than half of the cost of your education.

At UCSB, we want every admitted student to be able to attend regardless of his or her financial circumstances. The University views your education as a partnership involving the University, the state of California, the U.S. government, you, and your family. The types of financial assistance programs the University administers include grants, scholarships, loans, and student employment. In order to receive an offer of financial aid from UCSB, a student must be admitted to UCSB in a degree-granting program. Students enrolled through UCSB Extension or who are approved for enrollment on a "Limited Status" basis are not eligible.

The *Free Application for Federal Student Aid (FAFSA)* is the form that must be completed and submitted to the application processor to begin the process of applying for financial aid. Students who applied in November 1999 for admission to UCSB (for the 2000-2001 academic year) were sent the 2000-2001 FAFSA by the UC Office of the President. The FAFSA is also available at all high schools, colleges, and universities. You can also file the FAFSA electronically over the internet at www.fafsa.ed.gov. In order to file the FAFSA, you must be either a U.S. citizen or an eligible non-citizen (as defined in the FAFSA instructions).

Deadlines

To receive priority consideration for funding from UCSB and the California Student Aid Commission (CSAC—the agency that administers the Cal Grant programs), all financial aid applicants should have filed the FAFSA between January 1, 2000 and March 2, 2000. It is important to obtain a certificate of mailing from the U.S. Postal Service as proof that the FAFSA was filed by March 2, 2000. Students may still file the FAFSA after the March 2, 2000 priority filing deadline, but they will only be considered for the federal Pell Grant (undergraduates only) and federal Direct Loan programs.

Cal Grants

All undergraduate financial aid applicants without a bachelor's degree who are California residents were expected to apply for a Cal Grant by the March 2, 2000 priority filing deadline. In addition to filing the FAFSA, new students must have sent a *Grade Point Average (GPA) Verification Form* to the California Student Aid Commission (CSAC). If you applied for UC admission in November 1999, the UC Office of the President also sent you a Cal Grant GPA Verification Form. This form is also available at all California high schools and, upon request, from the UCSB Financial Aid Office.

Refunds

A full refund of fees may be granted to students who withdraw prior to the first day of instruction. Students who withdraw on or after the first day of instruction are eligible to receive partial refunds according to the schedule of refunds listed in this section. Information about refunds, fees, and deposits is available online at www.budget.ucop.edu/Fees/fees.html. Fee and refund information is subject to change without notice. Financial aid students should refer to page 27 if they are considering enrolling in a "deficit program."

Taxpayer Relief Act of 1997

Information on educational tax benefits that may have an impact on students and their families can be found in the Appendix.

About the Catalog

The following section of this catalog contains (1) information about the offerings and requirements of the colleges and their individual departments, (2) faculty lists, and (3) course lists. The overall organization is alphabetical by university academic unit (College of Creative Studies, College of Engineering, College of Letters and Science, Donald Bren School of Environmental Science and Management, Graduate School of Education), and alphabetical by department within each academic unit, as indicated in the table of contents. Students should read the chapter about their college as well as the entries related to departments of interest.

Because the catalog must be prepared in advance of the academic year it covers, it may not reflect very recent changes in courses, requirements, or faculty. The *Schedule of Classes*, available in the UCSB Bookstore before the opening of each new quarter, contains current information about class offerings and instructors and indicates when and where courses are offered. Students who want to plan their schedules before the *Schedule of Classes* is available should contact individual departments to determine when particular courses will be offered.

Several important matters should be noted:

- Faculty members are occasionally on leave. Department offices are the best source of information about the leave status of faculty members.
- Prerequisites are preparation needed for success in courses. These should be noted with care, as they are enforced at registration. Normally, students will not be able to register for a course for which they have not met the prerequisite(s) as listed in the catalog. Instructors may make an exception upon presentation of evidence of equivalent preparation.
- Some courses are not offered every year; consult the *Schedule of Classes* or the department for authoritative information.
- Admission to UCSB does not guarantee enrollment in any particular class.

How to read course listings:

Each course listing contains the course number, course title, number of units of credit, name of instructor(s), course prerequisites (if any), course enrollment information (if any), recommended preparation (if any), and course description. A course in which the instructor is listed as Staff may be taught by various instructors.

One or more codes (F, W, S, SS) may appear at the end of a course entry, indicating whether the course is normally offered in the fall, winter, or spring quarter, or in summer session.

Course numbers are assigned as follows:

- **1-99.** Lower-division courses, open to all UCSB students; especially appropriate for freshman and sophomore students; may not be taken for upper-division or graduate credit. The College of Creative Studies utilizes a separate and distinct numbering system, which is explained in its section of this catalog.
- **98-99.** Independent studies courses open to lower-division students. A student may take up to 5 units per quarter, 15 units per year, and 30 units total in all 98, 99, 198, 199, and 199RA independent studies courses combined. Graduate students will not receive credit toward advanced degrees for these courses.
- **100-199.** Upper-division courses, ordinarily open to students who have satisfied the prerequisites specified in catalog descriptions of these courses. Prerequisites may include appropriate prior college-level courses or their transfer equivalents, completion of six terms of college work, or a combination of six terms of college work and appropriate prior college courses. Generally, upper-division courses are not recommended for freshman students. No graduate course credit is allowed for upper-division courses even if additional work is completed, but a limited number of upper-division courses may be applied in fulfillment of graduate degree requirements. Students in the College of Letters and Science should review the Letters and Science List of Courses to determine if an upper-division course is applicable to the college's 60 upper-division unit requirement.
- **198-199.** Independent studies courses are open to students who (1) have attained upper-division standing, (2) have at least a 3.0 grade-point average for the preceding three quarters, (3) can demonstrate appropriate academic background, and (4) have obtained necessary approvals as outlined in the *Schedule of Classes*. A student may take up to 5 units per quarter, 15 units per year, and 30 units total in all 98, 99, 198, 199, and 199RA independent studies courses combined. Graduate students will not receive credit toward advanced degrees for these courses.
- **200-299.** Graduate courses, ordinarily open only to graduate students who have completed at least 12 upper-division units related to the subject matter of the course. Exceptionally well qualified undergraduates, with at least 12 units in the subject and a cumulative grade-point average of 3.0 or higher, may petition to enroll in graduate courses.
- **300-399.** Professional courses primarily offered in the Department of Education specially designed for teachers or prospective teachers.
- **400-499.** Other professional courses (primarily offered by the Donald Bren School of Environmental Science and Management).
- **500-599.** Courses reserved for advanced study and research, including but not limited to individual study, special topics, group projects, and practica involving teaching assistants or graduate student researchers.

College of Creative Studies

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E-mail: info@ccs.ucsb.edu
Website: www.ccs.ucsb.edu
Provost: William J. Ashby
Associate Provost: Armand Kuris

The College of Creative Studies at UCSB is unique in the University of California. The adjective "creative" is not intended to suggest that students create their own majors, although there is a great deal of flexibility in the Creative Studies programs. Rather, the Creative Studies major is for talented students who are committed to advanced and independent work in one of the disciplines represented in the college. Each of the approximately 250 students enrolled in the college enjoys close individual advising and conscientious academic attention from a faculty committed to undergraduate teaching. Courses offered by the college are designed to allow students to rigorously explore or even modify a field of knowledge rather than merely expose them to a predetermined quantity of fixed subject matter. Through intense creative work and research projects typically reserved for graduate school, students acquire a thorough comprehension of their discipline and are encouraged to begin making original contributions to the field. Most classes in the college are tutorials and small seminars.

In addition to taking courses within the College of Creative Studies, students are guided and encouraged to work within academic departments in the Colleges of Letters and Science and Engineering, taking full advantage of the many courses, extensive research equipment, facilities, and expertise available at UCSB.

Students choose one of the eight emphases offered by the College of Creative Studies when they apply for admission. The flexibility in curricular design, however, allows considerable latitude. Ambitious students occasionally complete two emphases. When appropriate to their educational goals, students may choose to complete both a CCS major and a major in either the College of Letters and Science or the College of Engineering. Students also have the option to complete one of the many minors now available through the College of Letters and Science.

Most Creative Studies courses are open to students from other UCSB colleges, although CCS students normally have priority. Permission of the instructor is required to remain enrolled in the course. Because Creative Studies course offerings are not published in the quarterly *Schedule of Classes*, students should contact the college office for registration details or refer to the College's homepage at ccs.ucsb.edu.

The college publishes the annual *College of Creative Studies Announcement*, containing detailed information and an application. It may be obtained, along with additional information, from the college office.

Emphases

Students may earn the bachelor of arts degree in Creative Studies with an emphasis in art (painting, sculpture, or book arts), biology, chemistry, literature, mathematics, music composition, or physics. They may also earn the bachelor of science degree in Creative Studies with an emphasis in chemistry, computer science, mathematics, or physics.

Art (painting, sculpture, or book arts)

Serious students who want to be artists may consider the CCS art program, where they can work with professionals in their field. The faculty consists of working artists, selected on the basis of the recognized quality of their art. The program emphasizes development of individual, literate artists.

Biology

Students interested in laboratory and field research might wish to consider the CCS biology program. It is designed to meet the needs of students who show promise of being able to begin advanced work early in their undergraduate careers. Biology students are expected to engage in independent research from the first year on.

Chemistry

This program is ideal for students who are impatient to get into the laboratory and begin research in chemistry. Undergraduates in the CCS emphasis can extend their study of chemistry to a level of inquiry usually associated with graduate school, as they build a foundation of fundamentals and participate in research projects.

Computer Science

The CCS computer science emphasis provides an accelerated curriculum covering mathematical foundations and programming techniques, quickly leading to more advanced upper-division courses. The broad spectrum of upper-division courses that are offered provides both depth and breadth necessary for future research in computer science.

Literature

The literature program is for students who have a genuine passion for reading and writing. The readings include major literary figures, periods and genres represented in English, American, and foreign literatures (both in translation and in the original). There are also creative writing courses that emphasize both verse and narrative prose.

Mathematics

The CCS mathematics program is a special curriculum designed to provide a format for aspiring mathematicians to discuss and solve non-routine problems in the various areas of mathematics. The curriculum was developed to accommodate students who are able to move to a high level of mathematical inquiry at a pace faster than the usual university curriculum would allow.

Music Composition

The CCS music composition program concentrates on various idioms and techniques of twentieth-century music as they are used in "serious" or "concert hall" works. The instructors are working composers who are concerned with helping students develop their compositional abilities through tutorials, small seminars, and special projects.

Physics

This program is for physics students with inquisitive minds. Participation is a key factor in the classroom, developing students' physical intuition and honing the ability to think on one's feet. The CCS physics program is designed to develop breadth and depth of understanding and provide a solid preparation for undergraduate research and graduate work.

Admission

Candidates for the college must meet the entrance requirements of the University of California and must complete an additional, separate application to the College of Creative

Studies. Before a final decision regarding an applicant's enrollment in the College of Creative Studies will be made, a letter of application and transcripts of the applicant's scholastic record must be received by the college. Two letters of recommendation are required to apply for most emphases. Candidates in the arts will submit work in evidence of talent: a slide portfolio of original work for art; fiction and/or poetry, and critical papers for literature; written scores of musical compositions for music. Work in evidence, such as examples of independent research, is helpful but not essential for candidates in mathematics and the sciences.

Transfer. Students may apply at any time for transfer into another academic unit of the university, with appropriate credit granted for their standing in the college. Those applying for transfer to the college, if accepted, will be enrolled at the equivalent College of Creative Studies level. Students are normally expected to spend at least six quarters enrolled in the college to receive a degree from the College of Creative Studies.

Grading and Unit Requirements

The grading system in the college is focused on accomplishment. It is a combination of pass/no record and variable unit credit. A pass in a college course is given only for work completed at above-average (3.0 or higher) level. For each course in the college, the student may receive any number of units from 0 to 6. Zero (0) is No Record—the course is not recorded on the student's transcript; any number of units from 1 to 6 is Pass. In each course the student enrolls for the specific number of units of work (up to a maximum of six) planned for that course, but at the end of the quarter the instructor makes the final determination of the unit value of the student's work.

Courses taken outside the College of Creative Studies will be graded according to the grading system of the college in which the courses were taken. Students must maintain a 2.0 grade-point average in courses taken for letter grades outside the College of Creative Studies.

Each unit of credit earned is counted toward graduation; 180 quarter-units of credit qualify the student to be evaluated for graduation with a bachelor of arts degree or a bachelor of science degree in the College of Creative Studies.

Degree Requirements

To receive a bachelor of arts or bachelor of science degree from the College of Creative Studies, a student must meet two sets of requirements: university degree requirements and college degree requirements.

University Degree Requirements

All undergraduate students must satisfy the Subject A—English Composition, American History and Institutions, units completed, academic residency, and grade-point average requirements. These requirements are described fully in the chapter "Undergraduate Education at UCSB."

College Degree Requirements

Creative Studies students work closely with their advisors to establish which courses they will complete for their emphases. When necessary, CCS students may take basic or introductory courses in the College of Letters and Science to prepare for advanced work.

In addition to completing an emphasis with the guidance of an advisor, each student must fulfill the College of Creative Studies general education requirements. These are designed to accommodate individual interests while still ensuring that each student acquires a broad education. Each student is required to complete a) two courses in fields related to the student's emphasis, as determined in consultation with a CCS advisor; b) eight courses broadly distributed in fields unrelated to the student's emphasis, as determined in consultation with the advisor. These may be selected from courses offered by the College of Creative Studies, the College of Letters and Science, and the College of Engineering.

One of these courses must fulfill the ethnicity requirement: a course that concentrates on the intellectual, social, and cultural experience and history of one of the following groups: Native-Americans, Afro-Americans, Chicanos/Latinos, Asian-Americans. This course may be selected from a list of courses that fulfill the ethnicity requirement offered through the College of Letters and Science, or it may be a College of Creative Studies course that is classified as such.

All College of Creative Studies courses, except the Computer Science CS courses, General Studies CS 10, and Physics CS 1A through CS 6, are considered upper-division. The only prerequisite for enrollment in any course is the instructor's approval.

Students in the college work closely with their advisors, reviewing their planned courses of study each quarter. Contingent upon completion of all requirements, the advisor recommends the student for graduation. Final certification for graduation is vested in the College of Creative Studies Executive Committee.

Faculty

Adebisi Agboola, Ph.D., Columbia University, Associate Professor (number theory)

Steven Allaback, Ph.D., University of Washington, Professor (fiction, American literature, fiction writing)

Caroline Allen, M.A., UC Santa Barbara, Lecturer (literature)

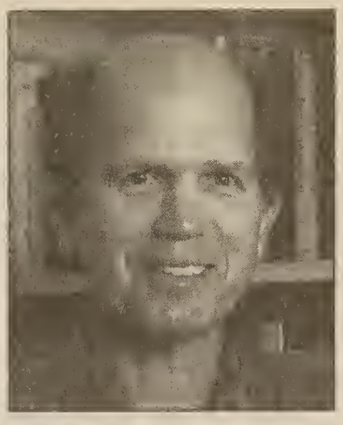
William Ashby, Ph.D., University of Michigan, Professor (French, linguistics)

Apostolos Athanassakis, Ph.D., University of Pennsylvania, Professor (Greek poetry, classical linguistics)

Donald Aue, Ph.D., Cornell University, Associate Professor (organic chemistry)

David D. Awschalom, Ph.D., Cornell University, Professor (condensed matter physics-experimental)

Robyn Bell, Ph.D., UC Santa Barbara, Lecturer with Security of Employment (literature)



John Wilson

LECTURER, LITERATURE

John Wilson, who teaches literature in the College of Creative Studies, takes a practical approach to fiction and to his favorite subject, poetry.

"I'm most interested in getting as close as possible to what was going through the author's mind when he or she was writing a story or poem. That's partly an act of imagination, because you can never be entirely sure." To that end, Wilson rarely uses secondary texts in his classes, preferring to teach solely from the original work.

"I want my students to learn how to read poetry and carry poems with them in their heads."

"I want my students to learn how to read poetry and carry poems with them in their heads," he says.

Wilson appreciates the Creative Studies environment because his students "already have a passion for literature and they know how they want to spend their time.

"The college is often described as a graduate school for undergraduates because of its small class size and seminar-style instuction," he adds.

Cynthia Brown, Ph.D., UC Berkeley, Professor (late medieval-early Renaissance literature)

Alison Butler, Ph.D., UC San Diego, Professor (bio-inorganic chemistry)

Dan Connally, M.F.A., UC Davis, Lecturer (art)

Kathleen Foltz, Ph.D., Purdue University, Associate Professor (cellular and molecular biology, marine invertebrate development)

Roger Freedman, Ph.D., Stanford University, Lecturer (physics)

Jeremy Haladyna, Ph.D., UC Santa Barbara, Lecturer (music composition)

Helen Hansma, Ph.D., UC Berkeley, Associate Adjunct Professor (biophysics—experimental)

Richard D. Hecht, Ph.D., UC Los Angeles, Professor (history of religions, Judaic studies)

Paul Z. Hernadi, Ph.D., University of Vienna; Ph.D., Yale University, Professor (literary theory, history of criticism, comparative literature, modern drama)

William Kraft, M.A., Columbia University, Professor (music composition)

Armand Kuris, Ph.D., UC Berkeley, Professor (parasitology, marine ecology)

Suzanne Jill Levine, Ph.D., New York University, Professor (Spanish and Latin literature, literary translation)

Darren Long, Ph.D., Cambridge University, Professor (mathematics)

John Nathan, Ph.D., Harvard University, Professor (modern Japanese fiction and film)

Hank Pitcher, Senior Lecturer with Security of Employment (art)

Harry Reese, M.A., Brown University and UC Santa Barbara, Professor (printmaking)

John Ridland, Ph.D., Claremont Graduate School, Professor (writing, poetry)

Francesc Roig, Ph.D., Amherst, Senior Lecturer with Security of Employment (physics)

Charles Ryavec, Ph.D., University of Michigan, Lecturer with Security of Employment (mathematics)

Abigail Solomon-Godeau, Ph.D., Graduate Center, C.U.N.Y., Professor (contemporary art, feminist and critical theory, nineteenth century European art, photography)

Barry Spacks, M.A., Indiana University, Professor (English, creative writing)

Bruce H. Tiffney, Ph.D., Harvard University, Associate Professor (evolutionary biology, paleobotany)

Zaragosa Vargas, Ph.D., University of Michigan, Associate Professor (modern U.S. labor, Chicano)

Robert R. Warner, Ph.D., Scripps Institution of Oceanography, Professor (marine ecology)

John Wilson, Ph.D., UC Santa Barbara, Lecturer (literature)

Emeriti Faculty

Naomi Greene, Ph.D., New York University, Professor Emerita (twentieth-century literature, film, Artaud)

Max Schott, M.A., UC Santa Barbara, Lecturer Emeritus (literature)

Logan Speirs, M.A., Cambridge University, Associate Professor (English and comparative literature)

Alan Stephens, Ph.D., University of Missouri, Professor Emeritus (English)

Max Weiss, Ph.D., University of Washington, Professor Emeritus (mathematics)

Adrian Wenner, Ph.D., University of Michigan, Professor Emeritus (biology)

Rosalind Wholden, M.F.A., UC Los Angeles, Lecturer (art history and criticism)

Affiliated Faculty

Peter R. Cappello, Ph.D., Princeton University, Professor (concurrent computation, information retrieval)

Omer Egecioglu, Ph.D., UC San Diego, Professor (computer science)

Kim Teru Yasuda, M.F.A., University of Southern California, Assistant Professor (art studio)

Creative Studies Courses

The following list consists of the kinds of courses offered in the college. Art CS 1, for instance, is "Drawing and Painting." In any quarter there might be as many as 10 sections, each a different course—e.g., "Abstract Painting," "Figure Drawing," etc. Students may enroll for different sections simultaneously.

Since these courses are arranged and scheduled after the Schedule of Classes has been printed, interested students should inquire about CCS courses at the beginning of registration for the subsequent quarter. Further information, including detailed descriptions of courses, is available at the College of Creative Studies, or on the CCS homepage at ccs.ucsb.edu.

Art

CS 1. Drawing and Painting
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Emphasis on the practice and development of making paintings and drawings.

CS 2. Themes
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Drawing and painting in sequences, and according to themes.

CS 4. Prints
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Emphasis on practice in graphic media (e.g., etching); various methods and materials utilized will be determined by particular faculty interest.

CS 5. Book Arts
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
The study and practice of typography; letterpress printing; both traditional and experimental uses of the printing press; and the book arts.

CS 6. Art Symposium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
A continuing series of lectures and presentations by artists and professionals closely associated with the arts.

CS 7. History, Theory, and Criticism
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Non-studio emphasis on historical, theoretical, and contemporary ideas and issues. A range of concepts will be discussed, from various approaches, according to the particular interests of faculty and students.

CS 10. Graphic Study of the History of Graphic Ideas: Drawing
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 10 emphasizes drawing.

CS 11. Graphic Study of the History of Graphic Ideas: Painting
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 11 emphasizes painting.

CS 12. Special Topics
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
This special studies course allows faculty to design and execute courses that reflect their particular research and teaching.

CS 15. Art Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Sculpture
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Practice in the design and development of making a sculpture using various materials as determined by particular faculty interest.

CS 25. Sculpture-Related Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Non-studio emphasis on generation and development of images, ideas, and imagination through field trips, slides, presentations, and videos. Primarily for sculptors.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.
Serious independent study in art with consenting faculty member.

Biology

CS 1. Models and Experiments
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Interplay between models and experimentation in the development of an understanding of the principles of biology.

CS 2. Laboratory Project
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Reading Project
(1-6) STAFF
Prerequisite: consent of instructor.

May be repeated each quarter for credit.

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 9. Advanced Independent Research
(1-6) STAFF
Prerequisite: consent of instructor.

Independent research on an original subject under faculty supervision carried out in a biology faculty research group. These advanced projects will attempt research of publishable quality; generally resulting in the preparation of a written report or manuscript for publication.

CS 10. Biology Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.

Serious independent study in biology with consenting faculty member.

Chemistry

CS 1. Major Unsolved Problems
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Study of some of the major unsolved problems in chemistry, with the aim of developing general experimental and theoretical approaches to these problems.

CS 2. Project
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Investigation of a specific problem in chemistry, set up in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Seminar
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Presentation and critical discussion of topics in chemistry.

CS 6. Organic Chemistry
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Accelerated course in elementary organic chemistry.

CS 7. Organic Chemistry Laboratory
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Laboratory and discussion section on organic chemistry and spectroscopy, taken in conjunction with Chemistry 7B-C.

CS 10. Chemistry Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.

Serious independent study in chemistry with consenting faculty member.

Computer Science

CS 1A. Computer Programming and Organization I
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units.

Introduction to computer science, programming, algorithms and data structures.

CS 1B. Computer Programming and Organization II
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units.

Object oriented programming, operating systems, scripting and assembly languages, graphical user interfaces.

CS 1L. Programming Laboratory
(1-4) STAFF
Prerequisite: consent of instructor; concurrent enrollment in Computer Science CS 1A or 1B.
May be repeated for credit.

Laboratory offering hands on Unix and other operating system experience. Small to large scale software development projects.

CS 2. Foundations of Computer Science
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units.

Mathematical foundations of computer science. Including sets, relations, functions, logic, and combinatorics.

CS 10. Computer Science Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Special Topics in Computer Science
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.

Lectures on a coherent body of computer science topics which are not usually presented in standard computer science courses.

CS 30A-B-C-D-E-F-G-H. Advanced Topics in Computer Science
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.

Advanced topics courses for advanced undergraduates, covering topics not offered in standard computer science courses, combining research orientation and current developments and technologies.

A. Distributed and Network Computing
B. Computer Graphics
C. Computer Architecture
D. Operating Systems
E. Programming Languages, Systems and Technologies
F. Mathematical Theory of Computation
G. Software Systems and Technology
H. General

CS 40. Projects in Computer Science
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.

Projects in computer science for advanced undergraduates. Students work with a faculty member on a research or creative project with the consent of academic advisor.

CS 50. Group Studies in Computer Science
(1-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.

Group studies intended for a small number of advanced undergraduate students who share an interest in a topic not included in the regular curriculum.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.

Serious independent study in computer science with consenting faculty member.

General Studies

CS 10. Group Interdisciplinary Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Group studies in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

CS 20. Advanced Group Interdisciplinary Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Advanced group studies in focused topics in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

Literature

CS 1. Writing: Verse
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Practice in the writing of original verse.

CS 2. Writing: Narrative Prose
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Practice in the writing of fiction.

CS 3. Writing: Expository Prose
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Practice in the writing of essays and criticism.

CS 5. Literature Symposium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

A continuing series of lectures, readings, and presentations by faculty, guest writers, and other professionals in the literary fields.

CS 10. Genres
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Emphasis on the development of literary forms, represented in the work of major authors, essential traditions. Exploration of ways genre directs and, discovered by a topic, takes individual shape. Intensive reading, substantial exposition.

CS 11. Literary Structure: Chronological
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Emphasis on periods and influences: intervals during which literary production especially corresponds with or responds to activity in the culture at large. Extensive reading and exposition.

CS 12. Literary Structure: Nonchronological
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Logical, analogical, cyclical, and repetitive schemes.

CS 13. Subjects and Materials
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.

Emphasis on style and content of literary texts: critical

investigation of how matter and manner work together in serious literature. Extensive reading and exposition.

CS 14. Themes and Motifs
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Emphasis on structure and meaning in literary texts: analytic focus on principles of representation, and on recurrent features, in the literature studied. Extensive reading and exposition.

CS 15. Literature Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.
Serious independent study in literature with consenting faculty member.

Mathematics

CS 1. Problem Solving
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Discussion and solution of nonroutine mathematical problems.

CS 2. Project
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Topics in Modern Algebra
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Topics may include groups; modules; vector spaces; algebras; metric structures on vector spaces; representation theory; multilinear algebra; graded structures; universal properties; a survey of important algebraic structures.

CS 5. Computer Applications
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Applications of the various campus computers and departmental microcomputers to problems in mathematics, biology, chemistry, and physics.

CS 10. Mathematics Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Special Topics
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Lectures on a coherent body of mathematical topics which are not usually presented in standard mathematics courses.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.
Serious independent study in mathematics with consenting faculty member.

Music

CS 1. Composition
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Individual instruction in composition, usually for one hour per week.

CS 2. Analysis: Materials
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Small group instruction in theoretical subjects (harmony, composition, orchestrations, etc.).

CS 3. Analysis: Forms
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Small group instruction in musical forms and their development.

CS 5. Special Topics
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Individual or small group instruction in selected subjects (individual composers and their works, special compositional techniques, etc.).

CS 6. Computer Applications
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Applications of the various campus computers to problems in music.

CS 15. Music Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.
Serious independent study in music with consenting faculty member.

Physics

CS 1A. Newtonian Mechanics
(1-4) STAFF
Prerequisite: consent of instructor.
Vectors. Kinematics. Newton's laws of motion. Work and energy. Conservative forces. Momentum. Conservation of momentum. Center of mass motion. Collisions. Systems with variable mass.

CS 2A. Mechanics and Waves
(1-4) STAFF
Prerequisites: consent of instructor.
Oscillatory motion. Rotational motion. Angular momentum. Gravity and central force motion. Elastic waves.

CS 3A. Waves, Kinetic Theory, and Relativity
(1-4) STAFF
Prerequisite: consent of instructor.
Sound waves. Fluid dynamics. Kinetic theory of matter. The Maxwell-Botzmann distribution. Specific heat. Entropy. The special theory of relativity.

CS 4. Electromagnetism
(1-4) STAFF
Prerequisite: consent of instructor.
Electrostatics. DC circuits. Magnetostatics. Faraday's law of induction.

CS 5. Electromagnetism and Optics
(1-4) STAFF
Prerequisite: consent of instructor.
Magnetic materials. AC circuits. Maxwell's equations. Electromagnetic waves. Ray optics. Wave optics. Kirchhoff diffraction theory.

CS 6. Quantum Physics
(1-4) STAFF
Prerequisite: consent of instructor.
Wave-particle duality. Photons. Matter waves. The uncertainty principle. The Schrodinger equation. Potential wells and barriers. The quantized simple harmonic oscillator. The hydrogen atom.

CS 10. Physics Colloquium
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 15A. Introduction to Experimental Physics
(1-2) STAFF
Prerequisite: Physics CS 3.
Not open for credit to students who have completed Physics 3HL.
Laboratory course focusing on using the experimental method to explore physical phenomena and to discover the specific mathematical laws describing them. Students are expected to carry out and interpret their own experiments. Three reports in the form of short papers are required. (F)

CS 15B. Experimental Physics
(1-3) STAFF
Prerequisite: Physics CS 15A.
Not open for credit to students who have completed Physics 4HL or 13BH.
Laboratory course focusing on the art and science of experimentation. Each student will design experiments to measure well-defined physical quantities, and build, borrow, and assemble the necessary apparatus. A research paper presenting the method, results, and conclusions, together with an oral presentation, will be required for each experiment.

CS 15C. Experimental Physics
(1-3) STAFF
Prerequisite: Physics CS 15B.
Not open for credit to students who have completed Physics 5HL or 13CH.
Laboratory course focusing on the art and science of experimentation. Each student will design experiments to measure well-defined physical quantities, and build, borrow, and assemble the necessary apparatus. A research paper presenting the method, results, and conclusions, together with an oral presentation, will be required for each experiment.

CS 20. Laboratory Project
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 30. Reading Project
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 40. Special Topics
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated each quarter for credit.
Lectures on a coherent body of physical topics which are not usually presented in standard undergraduate physics courses.

CS 99. Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Creative Studies students may enroll in a maximum of 24 units of Independent Studies courses per year, with a maximum of 45 units counted towards graduation.
Serious independent study in physics with consenting faculty member.

College of Engineering

College of Engineering, Engineering I, Room 1038; Telephone (805) 893-3207
Undergraduate Office, Engineering I, Room 1006; Telephone (805) 893-2809
Engineering Student Support Center, Building 698; Telephone (805) 893-8333
MESA Programs, Building 698; Telephone (805) 893-4026
Web site: www.engineering.ucsb.edu

Dean: Matthew V. Tirrell
Associate Dean for College Advancement and Planning: Glenn E. Lucas
Associate Dean for Academic Affairs: Robert G. Rinker
Assistant to the Dean for Undergraduate Studies: Jacqueline A. Hynes

The College of Engineering at UCSB is noted for its excellence in teaching, research, and service to the community. The college has an enrollment of approximately 1300 undergraduate students and 530 graduate students with a full-time, permanent faculty of 112. This results in an unusually good student to faculty ratio and a strong sense of community in the college.

Our laboratory facilities, both departmental and in our research centers, are state-of-the-art, and most are available to undergraduate as well as graduate students. UCSB has an unusually high proportion of undergraduates who are actively involved in faculty-directed research and independent study projects.

The college offers the bachelor of science degree in five disciplines: chemical engineering, computer engineering, computer science, electrical engineering, and mechanical engineering. Graduate degree programs are available in: chemical engineering, computer science, electrical and computer engineering, materials, and mechanical engineering. The undergraduate programs in chemical, electrical, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The computer science undergraduate programs are accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board.

The curriculum for the bachelor of science degree is designed to be completed in four years. Completion of the four-year program provides students with the background to begin professional careers or to enter graduate programs in engineering or computer science, or professional schools of business, medicine, or law. Our curricula are specifically planned to retain both of these options and to assure that our graduates are equally well prepared to enter industry and graduate study. The college and the university offer a wide variety of career counseling and job placement services.

The Undergraduate Office in Engineering I, Room 1006, provides general counseling for all undergraduates in the college. Faculty advisors for the individual majors are provided by the respective departments. The *College of Engineering Announcement*, which contains detailed information about the various programs and schedules, is published yearly and may be obtained by writing to the College of Engineering, Engineering I, Room 1006, University of California, Santa Barbara, California 93106-5130.

Admission

Applicants desiring to enter the College of Engineering must satisfy the general university admission requirements described in earlier sections of this catalog. The college strongly recommends that students who want to study engineering at UCSB plan their highschool programs to include the following courses:

English	**4 years**
U.S. History	**1 year**
Algebra	**2 years**
Plane Geometry	**1 year**
Trigonometry	**1/2 year**
Physics or Chemistry *(preferably both)*	**1 year**
Foreign Language	**2 years**

Additional recommended courses include advanced mathematics (pre-calculus/mathematical analysis, calculus) and computer science classes. It is strongly recommended that incoming freshmen complete a computer programming course prior to enrollment at UCSB.

A high-school student who is admitted to UCSB and is deficient in one or more of these prerequisites may be required to complete equivalent courses at UCSB. Students lacking these prerequisite highschool courses may be delayed in entering the upper division and in graduating.

Any student who is admissible to the university may be accepted by the College of Engineering provided that the college does not have more qualified applicants than openings, in which case preference will be given to advanced-standing students who are ready to enter the upper division and to freshmen. Supplemental screening for admission to the College of Engineering is based on further consideration of prior coursework, grades, test scores, and other factors.

Students entering the College of Engineering either as freshmen or as transfer students must be enrolled in a particular curriculum within the Department of Chemical Engineering, the

Subject Requirements for Entrance to the Upper Division

For Engineering Majors	*Minimum Number of Quarter-Units*
Calculus, Differential Equations, Linear Algebra	16-24
Chemistry (for science and engineering students)	8-12
Physics (for science and engineering students)	16
Engineering *	8-16
Humanities-Social Sciences	8-12
English	4-8
Unspecified Subjects	6-14
Total Required	**90**

* Course selections should include digital computer programming (C), electric circuits and devices, and those courses that are specified for the lower-division requirements for the engineering major desired. Typical courses include statics and computer organization.

For Computer Science Majors	*Minimum Number of Quarter-Units*
Calculus	12
Differential Equations	4
Linear Algebra	4
Computer Programming (JAVA)	4
Programming Methods	4
Foundations of Computer Science	4
Introduction to Computer Systems	4
Probability and Statistics (calculus based)	4
Physics (for science and engineering students)	12
Humanities-Social Sciences	8-12
English	4-8
Unspecified Subjects	18
Total Required	**90**

Department of Computer Science, the Department of Electrical and Computer Engineering, or the Department of Mechanical and Environmental Engineering.

Entrance to the Upper Division

Admission to the lower division (freshman and sophomore years) does not necessarily guarantee advancement to the upper division (junior and senior year) at some later time. Some departments have grade-point average requirements which must be met before a student is advanced to the upper-division major.

Continuing students shall have completed substantially all of the lower-division requirements for the major they are pursuing. Students who have not done so should go to the undergraduate office to determine eligibility for upper-division work.

Transfer students shall have (1) satisfied the general requirements for admission to the university at the junior level for transfer students, and (2) substantially completed a lower-division engineering or computer science program of not fewer than 90 quarter-units or 60 semester-units. The program must include the subject requirements listed in the table "Subject Requirements for Entrance to the Upper Division."

(The university accepts a maximum of 105 quarter-units or 70 semester-units of credit for college courses completed at a two-year community college.)

Degree Requirements

To be eligible for a bachelor of science degree from the College of Engineering, a student must meet two sets of requirements: university degree requirements and college degree requirements.

University Degree Requirements

All undergraduate students must satisfy university academic residency, Subject A, American history and institutions, unit, and scholarship requirements. These requirements are described fully in the chapter "Undergraduate Education at UCSB."

College Undergraduate Degree Requirements

All undergraduate students must satisfy the preparation for the major, the major, the general education, and scholarship requirements. Preparation for the major and the major requirements for each program offered by the College of Engineering appear in subsequent sections of this catalog.

General Education Requirements

The aims of the General Education Program in the College of Engineering are to provide a body of knowledge of general intellectual value that will give the student a broad cultural base and meet the objectives of the engineering profession. An appreciation and understanding of the humanities and social sciences are important in making engineers aware of their social responsibilities and enabling them to consider related factors in the decision-making process.

Students in the College of Engineering must complete the General Education requirements in order to qualify for graduation. These requirements may be met with courses satisfactorily completed on this campus or with equivalent courses completed at another accredited college or university. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses. Lists of courses satisfying the various General Education area requirements are available in the Undergraduate Office of the College of Engineering. For current information regarding the general education status of courses, please refer to the quarterly *Schedule of Classes.*

The General Education requirements for the College of Engineering include:

Writing 2 or 2E and 50 or 50E (Area A)	8 units
Social Sciences (Area D) and Civilization and Thought (Area E)	8-15 units
Arts (Area F) and Literature (Area G)	8-15 units

A total of 23 units is required from areas D, E, F, and G. At least 8 units must be from Areas D and E combined, with at least 4 of these units from Area E-1. At least 8 units must be completed in Areas F and G combined, and at least 4 of them must be from Area G.

In the process of fulfilling the General Education area requirements, students must include the following:

1. At least four courses designated as general education and writing requirement classes. (These courses are identified in the handout *General Education Requirements*, available in the College of Engineering Undergraduate Office and in the *Schedule of Classes.*)

2. At least two upper-division general education courses, from two separate departments, in each of which the student has already successfully completed one lower-division general education course.

3. One course that focuses on the history and cultural, intellectual, and social experience of racial minorities and/or other ethnic groups in the United States. Courses that meet this requirement are included in the General Education Requirements list available in the College of Engineering and are identified in the *Schedule of Classes.*

No more than two courses taken from the same department may be applied to the General Education requirement. Students should consult with the Office of Undergraduate Studies in the College of Engineering for additional information about General Education requirements.

Grade-Point Average Requirement

Students must maintain at least a 2.0 grade-point average in all courses taken in the overall major (including both lower- and upper-division classes), in all upper-division major courses, and in all work completed at the university. In addition, students who fail to earn a 2.0 grade-point average in either the preparation for the major or the major may be denied the privilege of continuing in the major. Individual departments may have higher grade-point average requirements.

Courses taken at any of the UC campuses, except those through UC Extension, are included in the computation of the grade-point average.

Courses appropriate for satisfying major requirements must be used in the computation of the grade-point average even if they are in excess of the minimum requirements of the major program. Courses graded Incomplete, except those taken on a passed/not passed basis, will be included as F grades in final computations. Certain courses designated as remedial are offered for work-load credit only and do not figure in calculation of the grade-point average.

Unit Requirement

In order to be eligible for graduation, students must complete at least 180 total units. Some majors in the College of Engineering require more than 180 units (see descriptions of individual majors.) Students must earn a specified number of these units while in residence at UCSB. See the chapter titled "Undergraduate Education at UCSB" for details. The unit differences between the total number of units specified for the baccalaureate degree and the number of units specified for the preparation for the major, the major, and general education are designated as free elective units. Students may choose from any course offering open to them to meet this requirement.

College Board Advanced Placement Credit

Students may satisfy some of the requirements of the College of Engineering through the College Board Advanced Placement Tests. Credit for these tests is assigned as follows:

Computer Science-AB

With a score of 3, 4, or 5 on Examination AB, equivalent credit will be granted for Computer Science 5PA. A score of 4 or 5 may be substituted for Computer Science 10 at the student's request by petition; however, students with high scores may take Computer Science 10 for full credit. Students substituting AP credit for Computer Science 10 must successfully complete Computer Science 11JA before enrolling in Computer Science 20.

English

With a score of 3, equivalent credit will be granted for the Subject A requirement (Writing 1 or 1E). With a score of 4, equivalent credit will be granted for the Subject A requirement and Writing 2 or 2E. With a score of 5, equivalent credit will be granted for Writing 2 or 2E and Writing 50 or 50E.

History

With a score of 3, 4, or 5 in American history, 8 units of credit toward graduation will be awarded, and the student will be given credit for one course in general education Area D. If the score of 3, 4, or 5 is in European history, 8 units of credit toward graduation will be granted, and the student will be given credit for one course in

general education Area E-2. Advanced placement credit in American history will satisfy the American history and institutions requirement.

Mathematics

With a score of 3, 4, or 5 on Examination AB, equivalent credit will be granted for Mathematics 3A. A score of 4 or 5 may be substituted by petition for Mathematics 3A and 3B at the student's request; however, students with scores of 4 or 5 may take Mathematics 3B for full credit. With a score of 3, 4, or 5 on Examination BC, equivalent credit will be granted for Mathematics 3A-B; students should enroll in Mathematics 3C.

For additional information about credit given for College Board Advanced Placement Examinations, see the chart on page 111.

Minimal Progress Requirements

A student in the College of Engineering will be placed on academic probation if the total number of units passed at UCSB is fewer than 36 at the end of the third term of enrollment, 72 at the end of the sixth term of enrollment, 108 at the end of the ninth term, or 144 at the end of the twelfth term. At least three-fourths of the minimum number of academic units passed must include courses prescribed for the major.

The following courses may be counted toward the unit minimums: courses repeated to raise C-, D, or F grades; courses passed by examination; courses graded IP (In Progress); courses passed during summer session at UCSB or at another accredited college or university and transferred to UCSB.

Students must obtain the approval of the dean of engineering to deviate from these requirements. Approval normally will be granted only in the case of medical disability, severe personal problems, or accident.

Students enrolled in dual-degree programs or in individualized programs of study must submit their proposed programs of study to the dean of engineering for approval. The individual programs must contain comparable standards of minimal academic progress.

Five-Year B.S. Engineering/M.S. Materials Degree Program

A combined B.S. Engineering/M.S. Materials program provides an opportunity for outstanding undergraduates in chemical, electrical, or mechanical engineering to earn both of these degrees in five years. This program enables students to develop all of the requisite knowledge in their core engineering disciplines and to complement this with a solid background in materials. This combination provides highly desirable training from an industrial employment perspective and capitalizes on the strengths of our internationally renowned materials department. For additional information, see the "Materials" section.

Five-Year Joint B.S./ M.A. Program with Economics

A program which combines a B.S. in any engineering major (including computer science) with a master of arts in economics with an emphasis in business economics provides an opportunity for outstanding engineering undergraduates to earn both degrees in five years. Information about this program is available in the College of Engineering Undergraduate Office or from the Department of Economics. Interested students should inform the Undergraduate Office of their interest in the program at the end of the sophomore year in order to plan their upper-division classes differently from other engineering undergraduates. After completing undergraduate degree requirements in an engineering program, students in this joint program must fulfill master's degree requirements for the degree in economics, as described in the chapter, "Graduate Education at UCSB."

College of Engineering Honors Program

The Honors Program in the College of Engineering is being designed to enrich the educational opportunities of its best students. Students in the Honors Program will be provided early experiences in research and scholarship through special seminars and individualized work in regular courses and as members of research teams as these programs are developed. Since this is a new honors program, just being implemented, it will be an expanding program, offering new options over the coming years.

Participation in the Honors Program offers preferential enrollment in classes for continuing students as well as graduate library privileges. Housing is available to eligible first-year students in Scholars' Halls located in several university-owned residence halls.

The College of Engineering Honors Program is open to incoming freshmen who have an academic high school grade-point average of 3.75 or better and a combined SAT I score of 1350 or higher. (Please note: eligibility criteria are subject to change at any time.) Students may continue as program members as long as they maintain a UCSB grade-point average of at least 3.5 and participate in program activities.

Dean's Honors

The College of Engineering gives public recognition to its outstanding undergraduate students by awarding Dean's Honors at the end of each regular academic term to students who have earned a 3.5 grade-point average for the quarter and have completed a program of 12 or more letter-graded units. (Grades of Incomplete or Not Passed automatically disqualify students for eligibility for Dean's Honors.) The Dean's Honors List is posted quarterly, and the award is noted quarterly on the student's permanent transcript.

Graduating students of the College of Engineering who have achieved distinguished scholarship while at the university may qualify for Honors, High Honors, or Highest Honors at graduation.

Tau Beta Pi

Tau Beta Pi is the nation's oldest and largest engineering honor society. Its purpose is to honor academic achievement in engineering. Election to membership is by invitation only. To be eligible for consideration, students must be in the top one-eighth of their junior class or the top one-fifth of the senior class. Graduate students and faculty also belong to this honor society. In addition to regular meetings on campus, the organization participates in regional and national activities and sponsors local events, such as tutoring and leadership training, to serve the campus and community.

The College of Engineering also has chapters of Pi Tau Sigma, the mechanical engineering honor society, and Eta Kappa Nu, the electrical engineering honor society. Membership in these societies is based on scholastic achievement. Students who are elected will be contacted directly by the societies during their junior or senior year.

Change of Major and Change of College

Students planning to enter an engineering major or to change from one engineering major to another will be expected to complete at least 30 units at UCSB before petitioning for a change of major. Students normally must satisfy the prerequisites of the prospective major.

Students planning to enter the pre-computer science program must complete at least 16 units of pre-major coursework at UCSB, including 8 units in computer science, with at least a 3.0 grade-point average for all pre-major courses completed with the University of California. Students who have completed the entire computer science pre-major with at least a 2.75 University of California grade-point average will be admitted to full major standing upon petition whether or not they have been officially declared pre-majors. Petitions for changing to the pre-computer science or computer science majors may be filed any time upon meeting the above requirements.

Before petitioning for a change of major to chemical, computer, electrical, or mechanical engineering, the following courses or their equivalents must be completed: Mathematics 3A-B; Chemistry 1A-AL, 1B-BL; Engineering 1A-B or 2A-B or 3 or Computer Science 5C; Physics 1.

Petitions for changing to an engineering major will be accepted only during the first four weeks of the spring quarter. Only a limited number of petitions will be approved, and selection for entry into the major will be based on UC grade-point averages and applicable courses completed.

Students who have completed more than 105 units will not be considered for a change of major/change of college in engineering or computer science unless they can demonstrate that they will be able to complete all the degree requirements for the proposed program without exceeding 195 total units.

Student Organizations

Student chapters of a number of engineering professional organizations are active on the UCSB campus. Students interested in any of these organizations may contact the Undergraduate Office of the College of Engineering for more information.

American Indian Science and Engineering Society
American Institute of Chemical Engineers
American Society of Mechanical Engineers
Association for Computing Machinery
Institute of Electrical and Electronics Engineers
Los Ingenieros (Mexican-American Engineering Society/Society of Hispanic Professional Engineers)
National Society of Black Engineers
Society of Automotive Engineers
Society of Women Engineers

Engineering Research Centers

Center for Computational Modeling and Systems (Alexandria Digital Library)

Director: Terence R. Smith
Girvetz Hall, Room 1205
Telephone: (805) 893-7665

Center for Control Engineering and Computation

Director: Petar V. Kokotovic
Associate Director: Mohammed Dahleh
Engineering I, Room 5119A
Telephone: (805) 893-7066

Center for Information Processing Research

Director: Allen Gersho
Engineering I, Room 3162
Telephone: (805) 893-8555

Center for Non-Stoichiometric Semiconductors

Director: Umesh Mishra
Associate Director: Herbert Kroemer
Engineering I, Room 5107
Telephone: (805) 893-8956

Center for Risk Studies and Safety

Director: Theofanis G. Theofanous
Engineering Research Center (ERC)
6740 Cortona Drive, Goleta, CA 93117
Telephone: (805) 893-4936

Center for Robust Nonlinear Control of Aeroengines

Director: Petar Kokotovic
Engineering I, Room 5119
Telephone: (805) 893-7066

Compound Semiconductor Research Laboratories

Director: Mark Rodwell
Engineering I, Room 5153
Telephone: (805) 893-4130

Engineering Computing Infrastructure

Director: Glenn E. Lucas
Engineering I, Room 3110
Telephone: (805) 893-3221

High Performance Composites Center

Director: Francis (Frank) Zok
Engineering II, Room 1361
Telephone: (805) 893-8232

Innovative Microwave Power Amplifier Consortium Center

Director: Umesh Mishra
Associate Director: Robert York
Engineering I, Room 5107
Telephone: (805) 893-8956

Interdisciplinary Center for Wide Band-Gap Semiconductors

Director: James Speck
Engineering II, Room 1347
Telephone (805) 893-8462

Multidisciplinary Optical Switching Technology Center

Director: John E. Bowers
Assistant Director: Daniel J. Blumenthal
Engineering I, Room 4165
Telephone: (805) 893-7989

Ocean Engineering Laboratory

Director: Marshall P. Tulin
Engineering Research Center (ERC)
6740 Cortona Drive, Goleta, CA 93117
Telephone: (805) 893-4937

National Research Centers

Materials Research Laboratory

Director: Anthony K. Cheetham
Materials Research Laboratory, Room 3004
Telephone: (805) 893-7233

National Nanofabrication Users Network

Director: Evelyn Hu
Building 981
Telephone: (805) 893-4130

Optoelectronics Technology Center

Director: Larry A. Coldren
Engineering II, Room 1339
Telephone: (805) 893-7105

Chemical Engineering

Department of Chemical Engineering, Engineering II, Room 3357; Telephone (805) 893-3412

Web site: www.chemengr.ucsb.edu

Chair: Glenn H. Fredrickson
Vice-Chair: Jacob Israelachvili

Faculty

Eray S. Aydil, Ph.D., University of Houston, Associate Professor (microelectronics materials processing, plasma processing and diagnostics)

§ **Sanjoy Banerjee**, Ph.D., University of Waterloo, Professor (transport processes, multiphase systems, process safety)

Bradley Chmelka, Ph.D., UC Berkeley, Professor (molecular sieves, polymers, liquid crystals, inorganic-organic hybrid materials, biomineralization magnetic resonance)

Glenn Fredrickson, Ph.D., Stanford University, Professor (polymer theory, block copolymers, phase transitions, statistical mechanics, glass transitions, composite media)

* **Jacob Israelachvili**, Ph.D., University of Cambridge, Professor (surface and interfacial phenomena, adhesion, colloidal systems, surface forces, bio-adhesive, friction)

* **Edward J. Kramer**, Ph.D., Carnegie Mellon University, Professor (microscopic fundamentals of fracture polymers, diffusion in polymers, and polymer surfaces, interfaces and thin films)

* **L. Gary Leal**, Ph.D., Stanford University, Professor (fluid mechanics, physics of complex fluids, rheology)

§ **Glenn E. Lucas**, Ph.D., Massachusetts Institute of Technology, Professor (structural materials, mechanical properties)

Eric McFarland, Ph.D., Massachusetts Institute of Technology, M.D., Harvard Medical School, Associate Professor (combinational material science, sensors, catalytic processes, change and energy transfer, biochemical engineering)

Dimitrios Maroudas, Ph.D., Massachusetts Institute of Technology, Associate Professor (theoretical/computational materials science, microstructure evolution in materials)

Duncan A. Mellichamp, Ph.D., Purdue University, Professor (process dynamics and control, digital computer control)

Samir Mitragotri, Ph.D., Massachusetts Institute of Technology, Assistant Professor (drug delivery and diagnostics, bio-membrane transport, membrane biophysics, biomedical ultrasound)

* **David J. Pine**, Ph.D., Cornell University, Professor (polymer, surfactant, and colloidal physics; multiple light scattering, macroporous and photonic materials)

Orville C. Sandall, Ph.D., UC Berkeley, Professor (transport of mass, energy, and momentum; separation processes)

Dale E. Seborg, Ph.D., Princeton University, Professor (process dynamics and control, monitoring and fault detection, system identification)

§ **Theofanis G. Theofanous**, Ph.D., University of Minnesota, Professor, Center for Risk Studies and Safety Director (transport phenomena in multiphase systems, risk analysis)

* **Matthew V. Tirrell**, Ph.D., University of Massachusetts, Professor (bioengineering, polymer science and engineering)

W. Henry Weinberg, Ph.D., UC Berkeley, Adjunct Professor (surface chemistry and physics)

Joseph Zasadzinski, Ph.D., University of Minnesota, Professor (surface and interfacial phenomena, high resolution microscopy, biomaterials)

* Joint appointment with the Department of Materials.

§ Joint appointment with the Department of Mechanical and Environmental Engineering.

Emeriti Faculty

Henri J. Fenech, Sc. D., Massachusetts Institute of Technology, Professor Emeritus (reactor engineering, safety, and economics)

Owen T. Hanna, Ph.D., Purdue University, Professor Emeritus (theoretical methods)

Robert G. Rinker, Ph.D., California Institute of Technology, Professor Emeritus (chemical kinetics, reaction engineering, catalysis)

Affiliated Faculty

Frederick F. Lange, Ph. D. (Materials)

G. Robert Odette, Ph.D. (Materials, Mechanical and Environmental Engineering)

Philip Alan Pincus, Ph.D. (Materials)

Chemical Engineering is an evolving discipline that grounds the engineer in a wide array of engineering science fundamentals in order to tackle problems at the forefront of technological development. In addition to the classical areas of fluid mechanics, transport phenomena, thermodynamics, reaction engineering, separation processes, and process control, the chemical engineering program at UCSB offers teaching and research opportunities in a host of modern areas. These include macromolecular science and engineering; microscale and mesoscale systems such as thin films, complex fluids and membranes; surface chemistry and microelectronic materials; large scale computation and simulation; biomedical engineering; reactor safety and reliability; structural materials; and materials characterization via advanced techniques such as NMR spectroscopy, neutron and X-ray scattering, and scanning tunneling microscopy.

The Department of Chemical Engineering offers the B.S., M.S., and Ph.D. degrees in chemical engineering. The B.S. degree is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

At the undergraduate level, emphasis is placed on a thorough background in the fundamental principles of science and engineering, strongly reinforced by laboratory courses in which students become familiar with the application of theory. At the graduate level, students are further required to demonstrate competence in conducting basic and applied research.

The B.S. degree provides excellent preparation for both challenging industrial jobs and for graduate degree programs.

Students who complete a major in chemical engineering may be eligible to pursue a California teaching credential. Interested students should consult the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate counseling is provided under the direction of the assistant to the dean for undergraduate studies. Each undergraduate also has one of the faculty as an advisor and mentor, to assist in selection of elective courses, plan academic programs, and provide advice on professional career objectives. Graduate students are assigned thesis advisors in the area of their research interest. Undergraduates in other majors who plan to change to a major in the Department of Chemical Engineering should consult the assistant to the dean for undergraduate studies for requirements.

Several publications are available from the department office describing the undergraduate and graduate programs.

Education Abroad Program (EAP)

Students are encouraged to broaden their academic experience by studying abroad for a year, or part of a year, under the auspices of the University of California's Education Abroad Program (See the chapter on "Additional Academic Programs").

Laboratory Facilities

1. Computational facilities. The College of Engineering maintains computing facilities open to all students within the college. These facilities provide students with access to state-of-the-art UNIX and NT-based workstations. Individual research groups also maintain significant PC and workstation facilities. All of these systems are connected to the Internet, which provides access to a wide variety of on- and off-campus computational services.

2. Process dynamics and control laboratories. The experimental facilities include a pH neutralization process which serves as a challenging demonstration unit for advanced process control and monitoring strategies. The pH process was designed to include key characteristics of difficult process control problems: nonlinear behavior, strong process interactions, time-varying behavior, and significant time delays. State-of-the art software packages for process modeling, process simulation, and control system design are available on both work stations and personal computers. Several major software packages that are widely used in industry have been donated to the process dynamics and control laboratories.

3. Mass transfer and separation processes laboratory. This facility contains well-instrumented equipment for studying mass transfer and separation processes. Some specialized research apparatus that have been constructed for this laboratory include: a laminar-liquid jet absorber used for gas/liquid chemical kinetics measurements; a wetted-sphere gas absorber used for diffusion coefficient measurements and gas/liquid chemical kinetics measurements; a modified Zipperclave™ reactor used for gas solubility measurements at pressures up to 200 bar; a stirred-cell absorber used for experimentally testing mass transfer models; a supported-liquid membrane apparatus used for testing diffusion/reaction models of facilitated transport; a diaphragm cell apparatus for liquid phase diffusion coefficient measurements. Data acquisition software and hardware are used where appropriate. Current research projects focus on acid gas treating using alkanolamines and advanced oxidation kinetics studies for refractory organics in water.

4. Plasma processing laboratory. This new laboratory includes two helical resonator plasma enhanced chemical vapor deposition (PECVD) reactors with *in situ* attenuated total reflection Fourier transform infrared (ATR-FTIR) spectroscopy capabilities for studying heterogeneous processes during PECVD of electronic materials. The laboratory also houses a transformer coupled plasma reactor with multiple gas phase and surface diagnostic techniques including optical emission spectroscopy, *in situ* spectroscopic ellipsometry, Langmuir probes, and laser induced fluorescence. A third reactor is used for plasma polymerization and plasma modification of surfaces.

5. Multiphase systems laboratory. This laboratory includes facilities for major thermal hydraulic research for advanced reactor development. There are also facilities for studying transient thermal hydraulics, wave phenomena, and two-phase flow related to safety in the power and process industries. The laboratory recently acquired a state-of-the-art laser Doppler anemometer to measure three-dimensional velocity fields.

6. Materials research facilities. The department shares with the Department of Materials extensive laboratory facilities for materials research. These include a microscopy and microanalytical facility with transmission electron microscopy, scanning electron microscopy as well as dynamic secondary ion mass spectroscopy. Laboratories for metallography, x-ray diffraction, mechanical testing, materials processing and polymer characterization are also available. The latter includes state-of-the-art facilities for molecular, rheological, and rheooptical characterization of polymer melts, solutions, and gels. The rheological characterization equipment includes a Rheometrics Mechanical Spectrometer (RMS-800), a constant stress rheometer, and various capillary viscometers. The rheooptical measurements are carried out on a Phase Modulated Flow Birefringence device. Static and dynamic light scattering is performed on a Brookhaven Laser Light Scattering Gonimeter. In addition, there is a wide range of facilities available for polymer synthesis and characterization which is shared with other laboratories. These include: Differential Scanning Calorimetry (DSC); Gel Permeation Chromatography (GC); Infrared Spectroscopy (IR and FTIR); and optical microscopy at elevated temperatures.

7. Catalysis and surface chemistry laboratory. This laboratory contains eight sophisticated ultra high vacuum machines with the following

experimental capabilities: atomic and molecular beam scattering, high-resolution electron energy loss spectroscopy, Fourier transform infrared reflection-absorption spectroscopy, quadrupole mass spectrometry, low-energy electron diffraction, Auger electron spectroscopy, X-ray and UV-photoelectron spectroscopies, contact potential difference measurements, and scanning tunneling and atomic force microscopies.

8. Interfacial sciences laboratories. These two laboratories in chemical engineering contain state-of-the-art equipment necessary for detailed measurements of the forces and structures at fluid-fluid and fluid-solid interfaces. The instruments include four versions of the surface forces apparatus designed to measure the interactions between surfaces such as biomembranes, polymers, and crystalline solids across liquids such as water or oils. The newest variation of the instrument can be used to measure dynamic forces important to lubrication and friction at the molecular scale. These labs also include high vacuum freeze-fracture devices used to prepare liquid samples for the lab's transmission electron microscope. This lab is one of the few in any chemical engineering department that contains both the scanning tunneling and atomic force microscopes which can provide atomic resolution images of surfaces. The lab also includes an optical microscope with Nomarski optics, a high speed ultracentrifuge, and two Langmuir-Blodgett troughs for creating ordered monolayer assemblies.

9. NMR laboratory. State-of-the-art facilities in nuclear magnetic resonance spectroscopy are available to support a wide range of materials and engineering investigations at a molecular level. The laboratory possesses a wide-bore 11.7 Tesla (500 MHz) solid-state NMR spectrometer, and a wide-bore 4.2 Tesla (180 MHz) NMR instrument. Extensive support equipment exists for the performance of non-routine experiments, such as Double Rotation, Dynamic Angle Spinning, Satellite Transition, DE-CODER, Pulsed-Field Gradient, and Multidimensional Exchange NMR. High-resolution liquid-state NMR capabilities are available on narrow-bore 11.7 Tesla (500 MHz) and 4.7 (200 MHz) spectrometers in the UCSB Materials Research Laboratory

10. Fluid mechanics laboratory. This laboratory combines a series of unique experimental systems for investigation of viscous and viscoelastic flow phenomena involving polymer liquids, suspensions, and other microstructured fluids. These include birefringence, dichroism, and light scattering systems for polymeric liquids; a computer-controlled four-roll mill for studies of drop breakup, coalescence, and particle dynamics; laser doppler velocimetry applied to suspensions and multiphase liquids, and rheological and rheooptical (polarization microscopy) facilities for investigation of liquid crystalline polymers.

11. Imaging science laboratory. This laboratory features facilities for studying basic problems in materials and biological systems using a variety of imaging methods. Capabilities include scanning tunneling electron microscopy (STM), and atomic force microscopy (AFM). Image processing workstations and software systems are interfaced to each device.

12. Light scattering laboratory. This laboratory is equipped with light scattering equipment for characterization of complex fluids such as emulsions, colloidal suspensions, surfactant solutions, and polymer solutions. Included are commercial and custom-designed gonimeters for measurements of the static structure factors at equilibrium and under a variety of shear flows. Dynamic light scattering is performed with a fast Brookhaven BI-9000 correlator. Both static and dynamic light scattering capabilities are integrated with controlled stress and controlled strain-rate rheometers for simultaneous light scattering and rheological measurements.

Undergraduate Program

Courses required for the pre-major or major, inside or outside of the Department of Chemical Engineering, cannot be taken for the passed/not passed grading option. They must be taken for letter grades.

Bachelor of Science—Chemical Engineering

Preparation for the major

Students should plan to meet the General Education requirements common to all engineering programs. A total of 108 lower-division units is required, of which 77 are specified for the major: Engineering 3 and 5A-B, Chemical Engineering 1A, 10 and 110A-B, Chemistry 1A-B-C, 1AL-BL-CL and 6A-B, ECE 6A-B, Mathematics 3A-B-C and 5A-B-C, and Physics 1, 2, 3, 4, and 3L, 4L.

Upper-division major

A total of 82 units is required, of which 61 upper-division units are specified: Chemical Engineering 120A-B-C, 128, 132A-B-C, 140A, 152A, 171 or 142, 180A-B, 184A-B; Chemistry 107A-B and 113B-C; Materials 100B; and 6 units of chemistry electives. Students have an opportunity to use the remaining 15 units to develop an emphasis from an approved list of courses in one of several areas including: basic chemical engineering, process control and mathematics/computation, materials, bioengineering (biochemical, biomaterials), and environment, risk and safety. Lists of approved electives are available in the department office. Transfer students who have completed most of the lower-division courses listed above and are entering the junior year of the chemical engineering program may take Chemical Engineering 10 concurrently with Chemical Engineering 120A in the fall quarter.

Cooperative Program—Chemical Engineering and Chemistry

Chemical engineering students with a strong interest in chemistry are advised to consider a five-year program leading to a B.S. degree in both chemical engineering and chemistry. Details of the program are available from the Department of Chemical Engineering or the Department of Chemistry. Other double majors can be arranged on an individual basis in areas such as chemical engineering and biological sciences.

Graduate Program

In addition to departmental requirements, program applicants and candidates for graduate degrees must fulfill University requirements described in the chapter "Graduate Education at UCSB."

Upon admission, students will receive a copy of the graduate student handbook which contains the department's policies and procedures.

Master of Science—Chemical Engineering

Admission

Graduate Record Examination (GRE) scores are required of all applicants to the graduate program. Applicants whose native language is not English must receive a score of at least 560 (220 on the computer-based test) on the Test of English as a Foreign Language (TOEFL) prior to admission to UCSB. Applicants who have received a bachelor's or master's degree from a U.S. college or university are exempt from this requirement. It is expected that most applicants for the M.S. degree in chemical engineering will have obtained undergraduate degrees in chemical engineering. However, students with degrees in other branches of engineering or in science may be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for graduate work.

Degree Requirements

Two plans are available for the M.S. degree in chemical engineering. Most students will follow Plan 1, although students with special backgrounds or requirements will be permitted, at the option of the department, to follow Plan 2. Knowledge of a foreign language is not required.

Plan 1. Thirty units of coursework, of which at least 20 units must be taken in graduate courses numbered 200-299 in chemical engineering or related fields subject to departmental approval. With departmental permission, up to three units may be taken in 596 coursework; units in courses numbered 598 or 599 do not count toward advanced degrees. The remaining units may be chosen from upper-division or graduate-level courses in chemical engineering or other branches of engineering or science, as approved by the department. In addition to meeting the course requirements, each student is expected to pursue a research project, theoretical and/or experimental, and to describe the results of the research in a thesis. The student must present and defend the thesis in an oral examination.

Plan 2. Forty-two units of coursework, of which at least 24 units must be taken in graduate courses numbered 200-299 in chemical engineering or related fields subject to departmental approval. With departmental permission, up to three units may be taken in 596 coursework; units numbered 598 or 599 do not count toward advanced degrees. The remainder may be chosen on the same basis as outlined in Plan 1. Only students who have had adequate research experience prior to beginning graduate work, or who plan to continue in

doctoral work at UCSB, will be permitted to follow Plan 2. Plan 2 candidates must pass an oral examination based on subjects studied in the graduate courses.

Doctor of Philosophy—Chemical Engineering

Admission

Doctor of philosophy applicants must meet master of science admission requirements. (See "Master of Science, Chemical Engineering–Admission.")

Degree Requirements

The student will be expected to plan and secure approval of a program of courses in chemical engineering and related fields which will provide a depth of understanding in the principal areas of chemical engineering. Students are required to complete a core requirement consisting of 24 units from a series of courses designed by the department. A minimum of 12 units beyond the core requirement is also required.

Prior to being advanced to candidacy for the Ph.D., the student will be evaluated on the basis of performance in (1) coursework in specified graduate-level core courses, and, in certain cases, a general knowledge examination, (2) a doctoral candidacy exam which will review the candidate's progress in research. The doctoral candidacy exam must be completed before the end of the spring term of the second year in residence.

Each student is expected to pursue a research project, theoretical and/or experimental, and to describe the results of the research in a dissertation. The student must present and defend the dissertation in an oral examination. The period of time between advancement to candidacy and completion of the final oral examination is expected to be approximately three years.

Chemical Engineering Courses

LOWER DIVISION

Engineering 3. Introduction to C Programming
(3) STAFF
Prerequisites: open to College of Engineering freshmen only, except computer science and pre-computer science majors.

Introduction to computers: word processing, spreadsheets, and C programming language. Basic programming concepts, algorithms, data structures, debugging, and program design.

Engineering 5A. Computations in Elementary Differential Equations and Linear Algebra
(1) STAFF
Prerequisites: Physics 1; Mathematics 5A (may be taken concurrently); open to College of Engineering majors only.

Ordinary differential equations, initial value problems, and linear algebra explored in an engineering context with the use of modern computer math tools. (F)

Engineering 5B. Computations in Vector Calculus
(1) STAFF
Prerequisites: Physics 1; Mathematics 5B (may be taken concurrently); open to College of Engineering majors only.

Vector differential calculus and vector integral calculus explored in an engineering context with the use of modern computer math tools. (W)

Engineering 5C. Computations in Ordinary and Partial Differential Equations
(1) STAFF
Prerequisites: Physics 1; Mathematics 5C (may be taken concurrently); open to College of Engineering majors only.

Nonlinear systems, Fourier analysis, boundary value problems, and partial differential equations explored in an engineering context with the use of modern math tools. (S)

1A. Engineering and the Scientific Method
(1) STAFF

Engineering and its relationship to basic science, with specific examples from engineering practice. Analysis and synthesis of engineering education. Career opportunities for chemical engineering graduates. Seminar/discussion format with guest lecturers and current experiences/issues from students' other freshman engineering/science classes.

10. Introduction to Chemical Engineering
(3) ZASADZINSKI
Prerequisites: Chemistry 1A-B-C; Mathematics 3A-B-C; and, Engineering 1A-B-C or 2A-B-C or 3 or Computer Science 5C.

Elementary principles of chemical engineering. The major topics discussed include material and energy balances, stoichiometry, and thermodynamics.

99. Introduction to Research
(1-3) STAFF
Prerequisites: consent of instructor and undergraduate advisor.

May be repeated for credit to a maximum of 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Directed study, normally experimental, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research group.

UPPER DIVISION

Engineering 100. Engineering Economic Analysis
(3) STAFF
Prerequisite: upper-division standing in engineering.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,W)

Engineering 101. Ethics in Engineering
(3) STAFF
Prerequisite: upper-division standing in engineering.

The nature of moral value, normative judgment, and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W,S)

Engineering 103. Advanced Engineering Writing
(4) STAFF
Prerequisites: Engineering 2A-B-C or Writing 1 or 1LK or 2 or 2LK or 50 or 50LK; and upper-division standing.

Analysis and practice of the forms of technical writing—reports, proposals, journal papers, abstracts, and presentations—that engineers and scientists will encounter in professional careers. Attention to research methods, document design, effective graphics, technical style, and electronic document preparation.

102. Biomaterials and Biosurfaces
(3) ISRAELACHVILI
Recommended preparation: prior biochemistry, physical chemistry, and organic chemistry.

Fundamentals of natural and artificial biomaterials and biosurfaces with emphasis on molecular level structure and function and the interactions of biomaterials and surfaces with the body. Design issues of grafts and biopolymers. Basic biological and biochemical systems reviewed for nonbiologists.

103A-B. Combinatorial Methods in Chemistry and Chemical Engineering.
(3-3) MCFARLAND
Same course as Chemistry 103A-B.
Recommended preparation: prior coursework in inorganic and organic chemistry.

Basic methodologies of chemical, biological, and materials research and discovery using automated, high-speed synthesis and screening of large numbers of materials. Emphasis on fundamentals necessary for combinatorial design, synthesis, screening, and analysis.

110A-B. Chemical Engineering Thermodynamics
(3-3) AYDIL
Prerequisites: Mathematics 5A. Engineering majors only.

Use of the laws of thermodynamics to analyze flow processes encountered in engineering practice. Presentation of equations of state for describing state properties of fluids and mixtures. Applications include vapor-liquid phase equilibria, solution thermodynamics, and chemical-reaction equilibria.

120A-B-C. Transport Processes
(4-3-3) THEOFANOUS, ZASADZINSKI, SANDALL, MAROUDAS
Prerequisites: Mathematics 5A-B-C; and Physics 4.

Principles and applications of fluid mechanics, heat transfer, and mass transfer in determining rates of transport processes.

121. Colloids and Biosurfaces
(3) ISRAELACHVILI

Basic forces and interactions between atoms, molecules, small particles and extended surfaces. Special features and interactions associated with (soft) biological molecules, biomaterials and surfaces: lipids, proteins, fibrous molecules (DNA), biological membranes, hydrophobic and hydrophilic interactions, bio-specific and non-equilibrium interactions.

124. Advanced Topics in Transport Phenomena/Safety
(3) BANERJEE
Prerequisites: Chemical Engineering 120A-B-C or Mechanical Engineering 151A-B; and Mechanical Engineering 152A.

Same course as ME 124.

Hazard identification and assessments, runaway reactions, emergency relief. Plant accidents and safety issues. Dispersion and consequences of releases.

125. Biomedical Engineering
(4) STAFF
Prerequisite: consent of instructor.

Not open for credit to student who have completed Chemical Engineering 125A-B.

Engineering applied to medicine. Basic physiology, transducers and systems. Medical terminology. Biomaterials. Thermal and electrical applications. Diagnostic and therapeutic radiology and nuclear medicine. Radiation protection. Laser medicine. Ultrasound, nuclear magnetic resonance, other diagnostic techniques. Image processing.

128. Separation Processes
(3) SANDALL
Prerequisites: Chemical Engineering 10 and 110A; open to College of Engineering majors only.

Basic principles and design techniques of equilibrium-stage separation processes. Emphasis is placed on binary distillation, liquid-liquid extraction, and multicomponent distillation.

130A. Computational Methods in Chemical Engineering
(3) STAFF
Prerequisites: Mathematics 5A-B-C; open to College of Engineering majors only.

Numerical methods/applications in chemical engineering; use of computer. Taylor Series; spline and rational interpolation; linear, nonlinear and rational least squares; nonlinear algebraic equations;

optimization; integrals; differential equations (initial and boundary value); partial differential equations.

130B. Mathematical Methods for Transport Phenomena
(3) FREDRICKSON, CHMELKA

Prerequisites: Mathematics 5A-B-C; open to College of Engineering majors only.

Not open for credit to students who have completed Nuclear Engineering 144.

Introduction to the solution of partial differential equations and boundary value problems in the physical sciences and engineering. Fourier analysis, transform methods, separation of variables, and Sturm-Liouville theory. Solution of elliptic, parabolic, and hyperbolic partial differential equations.

130D. Statistical Methods in Chemical Engineering
(3) STAFF

Prerequisites: Mathematics 5A-B-C.

Probability; properties of random variables; special distributions; sampling; parameter estimation; numerical statistical calculations via computer; hypothesis testing; chemical engineering data analysis via linear, nonlinear and multiple regression; data reconciliation; quality control; simulation; chemical engineering applications.

132A. Analytical Methods in Chemical Engineering
(3) FREDRICKSON

Prerequisites: Mathematics 5A-B.

Recommended preparation: Engineering 5A-B.

Develop analytical tools to solve elementary partial differential equations and boundary value problems. Separation of variables, method of characteristics, Sturm-Liouville theory, generalized Fourier analysis, and computer math tools.

132B. Computational Methods in Chemical Engineering
(3) MAROUDAS

Prerequisites: Mathematics 5A-B-C.

Recommended preparation: Engineering 5A-B.

Numerical methods for solution of linear and nonlinear algebraic equation sets, interpolation and numerical integration, optimization, initial-value problems in ordinary differential equations and boundary-value problems. Emphasis on development of computational tools for chemical engineering applications.

132C. Statistical Methods in Chemical Engineering
(3) SEBORG

Prerequisites: Mathematics 5A-B-C.

Recommended preparation: Engineering 5A-B.

Probability concepts and distributions, random variables, error analysis, point estimation and confidence intervals, hypothesis testing, development of empirical chemical engineering models using regression techniques, design of experiments, process monitoring based on statistical quality control techniques.

136. Introduction to Multiphase Flows
(3) THEOFANOUS

Prerequisites: Chemical Engineering 120A-B-C, or Mechanical Engineering 151C and 152A.

Same course as ME 136.

Development from basic concepts and techniques of fluid mechanics and heat transfer, to local behavior in multiphase flows. Key multiphase phenomena, related physics. Extension of local conservation principles to usable formulations in multiphase flows. Modelling approaches. Practical examples.

138. Risk Assessment and Management
(3) THEOFANOUS

Prerequisites: Chemical Engineering 120A-B-C; or Mechanical Engineering 151B and 152A.

Same course as ME 138.

Conceptual foundations of risk and its utility for decision making. Determinism, statistical inference, and uncertainty. Formulation of safety goals and approaches to risk management. Generalized methodology and tools for assessing risks in the industrial, ecological, and public health context.

140A-B. Chemical Reaction Engineering
(3-3) CHMELKA, MCFARLAND

Prerequisites: Chemical Engineering 110A-B and 120A-B-C.

Kinetics of homogeneous and heterogeneous reacting systems, with and without catalysis, and its use in predicting chemical conversion and selectivity in flow and nonflow reactors. Emphasis on the dynamic behavior and design considerations of chemical reactors.

142. Chemical Processing for Microelectronics
(3) AYDIL

Prerequisites: Chemical Engineering 120A-B-C.

Course covers applications of reaction engineering and transport phenomena to design and operation of reactors encountered in electronic materials processing. Chemical vapor deposition, plasma enhanced chemical vapor deposition, plasma etching, physical vapor deposition, and epitaxial deposition reactors will be discussed.

152A. Process Dynamics and Control
(4) MELLICHAMP, SEBORG

Prerequisites: Chemical Engineering 120A-B.

Development of theoretical and empirical models for chemical and physical processes, dynamic behavior of processes, transfer function and block diagram representation, process instrumentation, control system design and analysis, stability analysis, computer simulation of controlled processes.

152B. Process Control
(3) MELLICHAMP, SEBORG

Prerequisite: Chemical Engineering 152A.

Model-based control system design, feedforward control. Laboratory experiments involving process dynamics, feedback and feedforward control, autotuning control.

153. Advanced Topics in Process Control
(3) SEBORG

Prerequisites: Chemical Engineering 152A-B; consent of instructor.

Selected topics such as multivariable control, model predictive control, on-line optimization, statistical process control, and neural networks.

160. Introduction to Polymer Science
(3) KRAMER

Prerequisites: Chemistry 107A-B or 130A-B.

Same course as Materials 160.

Introductory course covering synthesis, characterization, structure, and mechanical properties of polymers. The course is taught from a materials perspective and includes polymer thermodynamics, chain architecture, measurement and control of molecular weight as well as crystallization and glass transitions.

171. Introduction to Biochemical Engineering
(3) MCFARLAND

Prerequisite: Chemical Engineering 140A.

Introduction to biochemical engineering covering enzyme and microbial growth and chemical kinetics with emphasis on the application of chemical engineering principles to the design and operation of industrial microbial processes.

180A-B. Chemical Engineering Laboratory
(3-3) STAFF

Prerequisites: Chemical Engineering 110A-B and 120A-B-C; also, Chemical Engineering 140A-B for 180B.

Experiments in thermodynamics, fluid mechanics, heat transfer, mass transfer, reactor kinetics, and chemical processing. Experimental design, analysis of results, and preparation of reports.

184A. Design of Chemical Processes
(3) SANDALL

Prerequisites: Chemical Engineering 110A-B; 120A-B-C; 140A; and 152A.

Not open to students who have completed Engineering 100 or Chemical Engineering 181.

Application of chemical engineering principles to plant design. Spreadsheeting and flowsheeting methods. Engineering cost principles and economic aspects.

184B. Design of Chemical Processes
(3) THEOFANOUS, MELLICHAMP

Prerequisites: Chemical Engineering 110A-B; 120A-B-C; 140A; 152A; and Chemical Engineering 184A.

Not open to students who have completed Chemical Engineering 182.

The solution to comprehensive plant design problems. Use of computer process simulators. Optimization of plant design, investment and operations.

194. Group Studies for Advanced Students
(1-4) STAFF

Prerequisites: consent of instructor; open to College of Engineering majors only.

Check with department for quarters offered.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular departmental curriculum.

196. Undergraduate Research
(2-4) STAFF

Prerequisite: upper-division standing; consent of instructor.

Must have a minimum 3.0 grade-point average for the preceding three quarters. May be repeated for up to 12 units. Not more than 4 units may be applied to departmental electives.

Research opportunities for undergraduate students. Students will be expected to give regular oral presentations, actively participate in a weekly seminar, and prepare at least one written report on their research.

198. Independent Studies in Chemical Engineering
(1-5) STAFF

Prerequisites: consent of instructor; upper-division standing; completion of two upper-division courses in chemical engineering.

Must have a minimum 3.0 grade point average for the preceding three quartersNo more than 3 units may be used as technical electives, and may not be used as chemical engineering electives. May be repeated up to twelve units. Students are limited to five units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Directed individual studies.

GRADUATE COURSES

202. Biomaterials and Biosurfaces
(3) ISRAELACHVILI

Prerequisites: consent of instructor.

Recommended preparation: prior biochemistry, physical chemistry, and organic chemistry.

Fundamentals of natural and artificial biomaterials and biosurfaces with emphasis on molecular level structure and function and the interactions of biomaterials and surfaces with the body. Design issues of grafts and biopolymers. Basic biological and biochemical systems reviewed for nonbiologists.

203A-B. Combinatorial Methods in Chemistry and Chemical Engineering
(3-3) MCFARLAND

Prerequisites: prior coursework in inorganic and organic chemistry; consent of instructor.

Same course as Chemistry 203A-B and Materials 223A-B.

Foundation and methodologies of chemical, biological, and materials research and discovery using automated, high-speed synthesis and screening. Emphasis on the chemical, biochemical, physical, and mathematical fundamentals necessary for experimental design, synthesis, high-throughput screening, and analysis of combinatorial libraries.

210. Advanced Thermodynamics
(3) ISRAELACHVILI, AYDIL

Prerequisite: consent of instructor.

Review of first and second laws, real gases, solutions and solubilities, phase and chemical equilibria, and time permitting, thermodynamics of aggregation and self-associating systems.

211A. Matrix Analysis and Computation
(4) STAFF

Prerequisite: consent of instructor.

Same course as Computer Science 211A, ECE 210A, ME 210A, and Mathematics 206A.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Graduate level-matrix theory with introduction to matrix computations. SVD's, pseudoinverses, variational characterization of eigenvalues, perturbation theory, direct and iterative methods for matrix computations.

211B. Numerical Simulation
(4) STAFF

Prerequisite: consent of instructor.

Same course as Computer Science 211B, ECE 210B, ME 210B, and Mathematics 206B.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Linear multistep methods and Runge-Kutta methods for ordinary differential equations: stability, order and convergence. Stiffness. Differential algebraic equations. Numerical solution of boundary value problems.

211C. Numerical Solution of Partial Differential Equations—Finite Difference Methods
(4) STAFF

Prerequisite: consent of instructor.

Same course as Computer Science 211C, ECE 210C, ME 210C, and Mathematics 206C.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Finite difference methods for hyperbolic, parabolic and elliptic PDEs, with application to problems in science and engineering. Convergence, consistency, order and stability of finite difference methods. Dissipation and dispersion. Finite volume methods. Software design and adaptivity.

211D. Numerical Solution of Partial Differential Equations—Finite Element Methods
(4) STAFF

Prerequisite: consent of instructor.

Same course as Computer Science 211D, ECE 210D, ME 210D, and Mathematics 206D.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Weighted residual and finite element methods for the solution of hyperbolic, parabolic and elliptical partial differential equations, with application to problems in science and engineering. Error estimates. Standard and discontinuous Galerkin methods.

212. Risk Assessment and Management
(3) THEOFANOUS

Prerequisites: consent of instructor.

Same course as ME 212.

Conceptual foundations of risk and its utility for decision making. Determinism, statistical inference, and uncertainty. Formulation of safety goals and approaches to risk management. Generalized methodology and tools for assessing risks in the industrial, ecological, and public health context.

213. Computational Methods in Materials Science
(3) MAROUDAS

Prerequisite: consent of instructor.

Topics of computational quantum and statistical mechanics will be covered including pseudopotential methods for band-structure and total-energy calculations, ab initio molecular dynamics, and classical potential methods for structural relaxation, lattice-dynamics, Monte Carlo, and molecular-dynamics simulations.

214. Statistical Thermodynamics
(3) PINE

Prerequisites: physical chemistry and consent of instructor.

Same course as Materials 214.

Ensembles and statistical mechanical formulation of the laws of thermodynamics. Classical statistical mechanics; quantum statistics; translational, rotational, vibrational, and electronic partition functions. Chemical equilibria. Real gases and distribution functions; other interacting systems; liquids and solids, Monte Carlo simulations.

215. Molecular Hydrodynamics
(3) FREDRICKSON

Prerequisite: consent of instructor.

The molecular origins of macroscopic hydrodynamic behavior, as derived from classical statistical mechanics. Topics include: kinetic theory, time correlation functions, linear response theory, Brownian motion, projection operator methods, and generalized hydrodynamics.

216A. Introduction to Magnetic Resonance Spectroscopy Techniques
(3) CHMELKA

Prerequisite: consent of instructor.

An introduction to basic magnetic resonance theory and experimental techniques, with emphasis on solid-state applications.

216B. Advanced Methods of Magnetic Resonance with Applications to Materials Science
(3) CHMELKA

Prerequisite: consent of instructor.

This course is intended to provide an understanding of advanced methods of magnetic resonance spectroscopy and imaging, emphasizing new applications to current issues in materials research.

218. Introduction to Multiphase Flows
(3) THEOFANOUS

Prerequisite: consent of instructor.

Same course as ME 218.

Development from basic concepts and techniques of fluid mechanics and heat transfer, to local behavior in multiphase flows. Key multiphase phenomena, related physics. Extension of local conservation principles to usable formulations in multiphase flows. Modelling approaches. Practical examples. Computer simulations.

219A. Ceramic Processing
(3) LANGE

Prerequisite: consent of instructor.

Same course as Materials 251A.

Processing of ceramics; glass-ceramics, gelation, and powder methods. Powder methods will be emphasized from powder manufacture through consolidation of shape with introduction to densification. Colloidal routes to powder preparation and consolidation.

219B. Densification and Microstructural Control
(3) LANGE

Prerequisite: consent of instructor.

Same course as Materials 251B.

Mass transport and kinetic sintering theories. Thermodynamics of pore phase disappearance. Grain growth during densification. Effects of a liquid phase (liquid phase sintering). Effects of inert phases on densification. Effects of applied pressure. Control of grain growth after densification.

220A-B. Advanced Transport Processes-Laminar Flow and Convective Transport Processes
(3-3) LEAL, BANERJEE

Prerequisite: consent of instructor.

Principles of applied mathematics, dimensional analysis and asymptotic approximation methods applied to problems in fluid mechanics and convective transport phenomena; low-Reynolds number flows, free-boundary problems, boundary-layer theories and other advection dominated phenomena, introduction to linear stability theory.

220C. Advanced Transport Processes-Mass Transfer
(3) SANDALL

Prerequisite: consent of instructor.

Principles of applied mathematics, dimensional analysis and asymptotic approximation methods applied to problems in fluid mechanics and convective transport phenomena; low Reynolds number flows, free-boundary problems, boundary-layer theories and other advection dominated phenomena, introduction to linear stability theory.

220D. Advanced Transport Phenomena-Turbulence Theory
(3) BANERJEE

Prerequisite: consent of instructor.

Same course as ME 228.

Statistical formulation for turbulent flows, conditional averages and coherent structures, direct numerical and large eddy simulation, approaches to subgrid scale modelling, renormalization methods and closure: renormalized perturbation theory and renormalization group methods, dynamic subgrid scale models. Diffusion problems.

222A. Colloids and Interfaces I
(3) ISRAELACHVILI

Prerequisite: consent of instructor.

Same course as Materials 222A.

Introduction to the various intermolecular interactions in solutions and in colloidal systems: Van der Waals, electrostatic, hydrophobic, solvation, H-bonding. Introduction to colloidal systems: particles, micelles, polymers, etc. Surfaces: wetting, contact angles, surface tension, etc.

222B. Colloids and Interfaces II
(3) ZASADZINSKI

Prerequisite: consent of instructor.

Same course as Materials 222B.

Recommended preparation: Materials 222A or Chemical Engineering 222A.

Continuation of 222A. Interparticle interaction, coagulation, flocculation, DLVO theory, steric interactions, polymer-coated surfaces, polymers in solution, viscosity in thin liquid films. Surfactant self-assembly: micelles, micro-emulsions, lamellar phases, etc. Surfactants in surfaces: Langmuir-Blodgett films, adsorption, adhesion.

225. Biomedical Engineering
(4) STAFF

Prerequisite: consent of instructor.

Not open for credit to students who have completed Chemical Engineering 225A-B.

Engineering applied to medicine. Basic physiology, transducers and systems. Medical terminology. Biomaterials. Thermal and electrical applications. Diagnostic and therapeutic radiology and nuclear medicine. Radiation protection. Laser medicine. Ultrasound, nuclear magnetic resonance, other diagnostic techniques. Image processing.

230A. Advanced Theoretical Methods in Engineering
(3) CHMELKA, FREDRICKSON

Prerequisite: consent of instructor.

Same course as ME 244A.

Methods of solution of partial differential equations and boundary value problems. Linear vector and function spaces, generalized Fourier analysis, Sturm-Liouville theory, calculus of variations, and conformal mapping techniques.

230B. Advanced Theoretical Methods in Engineering
(3) FREDRICKSON

Prerequisites: Chemical Engineering 230A and consent of instructor.

Same course as ME 244B.

Advanced mathematical methods for engineers and scientists. Complex analysis, integral equations and Green's functions. Asymptotic analysis of integrals and sums. Boundary layer methods and WKB theory.

230C. Nonlinear Analysis of Dynamical Systems
(3) MAROUDAS

Prerequisites: Chemical Engineering 230A and consent of instructor.

Bifurcation and stability theory of solutions to nonlinear evolution equations; introduction to chaotic dynamics. Emphasis on asymptotic and numerical methods for the analysis of steady-state and time-dependent nonlinear boundary-value problems.

230D. Numerical Methods in Chemical Engineering
(3) MAROUDAS
Prerequisite: consent of instructor.
The course will cover topics of numerical analysis with emphasis on methods for solution of linear and nonlinear algebraic equation sets and initial-value problems, finite-difference and finite-element methods, numerical bifurcation analysis, nonlinear optimization, and Monte Carlo methods.

238A-B. Rheology of Polymeric Liquids
(3-3) LEAL, PINE
Same course as Materials 238A-B.
A fundamentally-based course focusing on: the microstructural and molecular basis of viscoelastic flow for complex fluids, with a particular focus on polymeric liquids, liquid crystals and colloidal suspensions; experimental techniques and the analysis of viscoelastic flow phenomena.

239. Light Scattering in Complex Fluids
(3) PINE
Prerequisite: consent of instructor.
Same course as Materials 239.
Principles of static and dynamic light scattering applied to complex fluids. Scattering of electromagnetic waves, the static and dynamic structure factors, and the analysis of multiple scattering.

240A-B. Advanced Chemical Reactor Design
(3-3) RINKER
Prerequisite: consent of instructor.
Following review of the theory of reaction kinetics for catalyzed and noncatalyzed systems, detailed consideration is given to design and performance of catalysts and chemical reactors. Mathematical studies of stability and optimization are emphasized in relationship to mass, energy, and momentum transport.

242. Chemical Processing for Microelectronics
(3) AYDIL
Prerequisite: consent of instructor.
Course covers applications of reaction engineering and transport phenomena to design and operation of reactors encountered in electronic materials processing. Chemical vapor deposition, plasma enhanced chemical vapor deposition, plasma etching, physical vapor deposition and epitaxial deposition reactors will be discussed.

246. Advanced Catalysis
(3) STAFF
Prerequisite: consent of instructor.
Theories of reaction rates. Heterogeneous catalysis, including physical structure and characterization of catalysts. Catalyst poisoning. Combustion. Fluidized bed reactors. Statistical estimation of kinetic parameters. Stability of chemical reactors.

250. Advanced Process Dynamics
(3) MELLICHAMP
Prerequisite: consent of instructor.
Analysis of unsteady state chemical processes with emphasis on multivariable systems, introduction to state variable techniques, sampled-data control systems, computer-aided control system design.

252. Advanced Process Control
(3) SEBORG
Prerequisite: consent of instructor.
Advanced topics in process control with emphasis on multivariable control, predictive control, process identification, and process monitoring.

256. Seminar in Process Control
(3) STAFF
Prerequisites: Chemical Engineering 250 and 252.
Selected research topics in process control.

262. Structural Ceramics
(3) LANGE
Prerequisites: consent of instructor.
Same course as Materials 262.
Ceramic processing methods. Flaws in ceramics. Fracture resistance and microstructure. Probabilistic design concepts. Non-destructive evaluation approaches. Reinforced ceramics. High temperature properties. Impact damage.

290. Seminar
(.5) STAFF
May be repeated for credit.
Seminar featuring guest speakers and graduate students on topics of current research interest.

291. Research Group Studies
(1-2) STAFF
Prerequisite: consent of instructor.
Students or instructors present recently published papers and/or results relevant to their own research.

594. Special Topics
(1-4) STAFF
Special seminar on research subjects of current interest.

596. Directed Reading and Research
(2-4) STAFF
A written proposal for each tutorial must be approved by the department chair.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Not applicable to course requirement for master of science degree.
Only for research underlying the thesis and writing the thesis.

599. Dissertation Research and Preparation
(1-12) STAFF
Only for research underlying the dissertation and writing the dissertation.

Computer Engineering

Computer Engineering Major,
Engineering I, Room 4157;
Telephone (805) 893-5615 or (805) 893-8292
Email: info@ce.ucsb.edu
Web site: www.ce.ucsb.edu
Director: Kwang-Ting (Tim) Cheng

Faculty

Kevin Almeroth, Ph.D., Georgia Institute of Technology, Assistant Professor (computer networks and protocols; large-scale multimedia systems; performance evaluation and distributed systems)

Forrest D. Brewer, Ph.D., University of Illinois at Urbana-Champaign, Associate Professor (VLSI and computer system design automation, theory of design and design representations, symbolic techniques in high level synthesis)

Tevfik Bultan, Ph.D., University of Maryland, College Park, Assistant Professor (building and analyzing large scale software and system building tools, high level hardware designs)

Steven E. Butner, Ph.D., Stanford University, Professor (computer architecture, VLSI design of CMOS and gallium-arsenide ICs with emphasis on distributed organizations and fault-tolerant structures)

Edward Chang, Ph.D., Stanford University, Assistant Professor (multimedia systems, database systems, and distributed systems)

Kwang-Ting (Tim) Cheng, Ph.D., UC Berkeley, Professor (design automation, VLSI and MCM testing, design synthesis, design verification, algorithms)

Amr El Abbadi, Ph.D., Cornell University, Professor (fault-tolerant distributed systems, distributed databases, operating systems)

Teofilo Gonzalez, Ph.D., University of Minnesota, Professor (multimessage multicasting, VLSI placement and routing algorithms, scheduling theory; design and analysis of algorithms)

Oscar H. Ibarra, Ph.D., UC Berkeley, Professor (theory of computation, design and analysis of algorithms, computational complexity, parallel computing, VLSI, computer-aided design)

Alan G. Konheim, Ph.D., Cornell University, Professor (computer communications, computer systems, modeling and analysis, cryptography)

Malgorzata Marek-Sadowska, Ph.D., Technical University of Warsaw, Poland, Professor (design automation, computer-aided design, integrated circuit layout, logic synthesis)

P. Michael Melliar-Smith, Ph.D., University of Cambridge, Professor (fault tolerance, formal specification and verification, distributed systems, communication networks and protocols, asynchronous systems)

Louise E. Moser, Ph.D., University of Wisconsin, Professor (distributed systems, computer networks, software engineering, fault-tolerance, formal specification and verification, performance evaluation)

Behrooz Parhami, Ph.D., UC Los Angeles, Professor (parallel architectures and algorithms, computer arithmetic, computer design, dependable and fault-tolerant computing)

The Computer Engineering Program's objective is to educate broadly based engineers with an understanding of digital electronics, computer architecture, system software and integrated circuit design. These topics bridge traditional electrical engineering and computer science curricula. The Computer Engineering degree program is conducted jointly with faculty from the Department of Computer Science and the Department of Electrical and Computer Engineering. Computer engineers emerging from this program will be able to design and build integrated digital hardware and software systems in a wide range of applications areas. Computer engineers will seldom work alone and thus teamwork and project management skills are also emphasized. The undergraduate program in Computer Engineering prepares students for a wide range of positions in business, government and private industrial research, development and manufacturing organizations.

Undergraduate advising is provided under the direction of the Assistant to the Dean for undergraduate studies in the College of Engineering. Faculty advisors are also available to help with academic program planning. Students who hope to change to this major should consult the Assistant to the Dean.

Undergraduate Program

Bachelor of Science—Computer Engineering

The curriculum contains a core required of all computer engineers, a choice of a least 32 units of senior year elective courses including completion of two out of eight elective sequences and a senior year capstone project.

Because the Computer Engineering degree program is conducted jointly with the Department of Computer Science and the Department of Electrical and Computer Engineering, several of the upper-division courses have equivalent versions offered by ECE or CMPSC. These courses are considered interchangeable, but only one such course of a given equivalent ECE/CMPSC pair may be taken for credit.

Courses required for the major, whether inside or outside of the Departments of Electrical and Computer Engineering or Computer Science, must be taken for letter grades. They cannot be taken for the passed/not passed grading option.

Preparation for the major

All undergraduate Computer Engineering majors are required to meet a set of minimum unit and grade-point requirements and a set of General Education requirements which are common to all undergraduate majors in the College of Engineering. In addition, required preparation for the major consists of the following lower-division courses (or their equivalents if taken elsewhere): Chemistry 1A-B, 1AL-BL; Computer Science 10, 20, 40, 60; ECE 2A-B-C, 15A-B; Engineering 5A; Mathematics 3A-B-C, 5A; Physics 1, 2, 3, 4, 3L, 4L.

The Assistant to the Dean can suggest a recommended study plan for Computer Engineering freshmen and sophomores. Each student is assigned a departmental faculty advisor who must be consulted in planning the junior and senior year programs.

Upper-division major

The upper-division requirements consist of a set of required courses and a minimum of 32 units of additional departmental elective courses comprising at least two sequences chosen from a set of eight specialty sequences. Each sequence must consist of two or more courses taken from the same course/sequence group. The department electives must also include a capstone project. Upper-division courses required for the major are: Computer Science 130A, 170; ECE 152A-B, 154, either ECE 139 or PSTAT 120A; Engineering 101.

The required departmental electives are taken primarily in the senior year; they permit students to develop depth in specialty areas of their choice. A student's elective course program and senior project must be approved by a departmental faculty advisor. A variety of elective programs will be considered acceptable. Sample programs include those with emphasis in: computer-aided design (CAD); computer systems design; computer networks; distributed systems; programming languages; real-time computing and control; multimedia; and very large-scale integrated (VLSI) circuit design.

The defined sequences from which upper-division departmental electives may be chosen are:

- Computer-Aided Design (CAD): ECE 156A-B
- Computer Systems Design: ECE/CMPSC 153A, ECE 153B
- Computer Networks: ECE 155A/CMPSC 176A, ECE 155B/CMPSC 176B
- Distributed Systems: ECE 151/CMPSC 171 and one or both of the Computer Networks courses
- Programming Languages: CMPSC 160, 162
- Real-Time Computing & Control: ECE 147A-B, 157
- Multimedia: ECE 178, ECE/CMPSC 181B, ECE 160/CMPSC 182
- VLSI: ECE 124A, 124D

Satisfactory Progress and Prerequisites

A majority of Computer Science and Electrical and Computer Engineering courses have prerequisites which must be completed successfully. Students will not be permitted to take any ECE or CMPSC course if they received a grade of F in one or more of its prerequisites. Students who fail to maintain a grade-point average of at least 2.0 in the major may be denied the privilege of continuing in the major.

Five-Year Bachelor of Science/ Master of Science Program

A combined B.S./M.S. program in Computer Engineering provides an opportunity for outstanding undergraduates to earn both degrees in five years. The M.S. degree will be earned in either the Department of Computer Science or the Department of Electrical and Computer Engineering while the B.S. degree is earned in Computer Engineering. Additional information about this program is available from the undergraduate office. Interested students should contact the undergraduate office early in their junior year because they need to plan their junior year classes differently from other undergraduates. Transfer students should notify the office of their interest in the program at the earliest possible opportunity. In addition to fulfilling undergraduate degree requirements, B.S./M.S. degree candidates must meet Graduate Division degree requirements, including university requirements for academic residence and units of coursework as described in the chapter "Graduate Education at UCSB."

Computer Science Courses

Courses listed in this section represent only a partial listing of Computer Science courses and are intended for the use of Computer Engineering majors. Refer to the Computer Science course section on page 78 for a full listing of courses.

LOWER DIVISION

5AA-ZZ. Introduction to Computer Programming and Organization
(4) STAFF

Not open for credit to students who have completed Computer Science 10 or Engineering 1A-B-C or 2A-B-C or 3. May be repeated for credit provided letter designations are different.

Introduction to programming and the organization of computers. Basic programming concepts, algorithms, data and control structures, debugging, program design, documentation, structured programming. Sections are:

C. C Programming
PA. Pascal
JA. Java

10. Introduction to Computer Programming
(4) GONZALEZ, SU

Students with no prior programming background are encouraged to take Computer Science 5JA before 10.

Introduction to programming and computers. Basic programming concepts: algorithms, data and control structures, debugging, program design, documentation, structured programming, object oriented programming.

20. Programming Methods
(4) SINGH

Prerequisite: Computer Science 10.

Programming techniques as follows: specification, representation, and manipulation of basic data structures such as stacks, queues, lists, trees, sets, arrays, etc. Searching and sorting techniques; predicate logic and program correctness; induction and recursion; running time analysis. Students write several medium-sized object-oriented programs.

40. Foundations of Computer Science
(4) KONHEIM

Prerequisites: Computer Science 10 or 12; and Mathematics 3C.

Not open for credit to students who have completed Computer Science 26.

Propositional predicate logic, set theory, functions and relations, counting, mathematical induction and recursion (generating functions).

60. Introduction to C, C++, and UNIX
(4) BRUNO

Prerequisites: Computer Science 10 and 20.

Reduced credit of 2 units will be given to students who have completed Computer Science 12 or 22.

Syntax and semantics of C and C++. Introduction to basic UNIX utilities and tools. Students complete several small projects that exercise their understanding of the material presented in class.

UPPER DIVISION

130A. Data Structures and Algorithms I
(4) GONZALEZ

Prerequisites: Computer Science 12 or 22 or 60; and, Computer Science 26 or 40; and, Computer Science 20; open to computer science and computer engineering majors only.

The study of data structures and applications. Correctness proofs and techniques for the design of correct programs. Internal and external searching. Hashing and height balanced trees. Analysis of sorting algorithms. Memory management. Graph traversal techniques and their applications.

130B. Data Structures and Algorithms II
(4) GONZALEZ

Prerequisites: Computer Science 26 or 40; and Computer Science 130A.

Design and analysis of computer algorithms. Correctness proofs and techniques for the design of correct programs. Solution of recurrence relations. Design techniques: divide and conquer, greedy strategies, dynamic programming, backtracking, and local search. Applications of techniques to problems from several disciplines.

136. Automata and Formal Languages
(4) EGECIOGLU

Prerequisites: Computer Science 26 or 40; open to computer science and computer engineering majors only.

Finite automata and regular expressions; properties of regular languages; pushdown automata and context free grammars/languages; properties of context-free languages.

153A. Hardware/Software Interface
(4) BRUNO

Prerequisite: ECE 152A.

Same course as ECE 153A.

Machine-level structures implementing the operating system abstraction; memory-mappers, multi-level interrupts, direct memory access techniques. Lowest-level software/firmware structures: micro-kernels, interpreters, emulators, threaded-code, real-time scheduling. Compilation and cross-compilation techniques; system initialization; validation and debugging; in-circuit testing. (first offered 2002-2003)

160. Translation of Programming Languages
(4) EL ABBADI

Prerequisites: Computer Science 130B and 136; open to computer science and computer engineering majors only, or by consent of department.

Study of the structure of compilers. Topics include: lexical analysis; syntax analysis including LL and LR parsars; type checking; run-time environments; intermediate code generation; and compiler-construction tools.

162. Programming Languages
(4) HÖLZLE

Prerequisite: Computer Science 130A; open to computer science and computer engineering majors only, or by consent of department.

Concepts of programming languages: scopes, parameter passing, storage management; control flow, exception handling; encapsulation and modularization mechanism; reusability through genericity and inheritance; type systems; procedural, object-oriented, functional, and logic programming languages.

170. Operating Systems
(4) AGRAWAL

Prerequisites: Computer Science 130A or 125; and, Computer Science 154; open to computer science, computer engineering, or ECE majors, or by consent of department.

Basic concepts of operating systems. The notion of a process; interprocess communication and synchronization; input-output, file systems, memory management.

171. Distributed Systems
(4) EL ABBADI

Prerequisite: Computer Science 170.

Not open for credit to students who have completed ECE 151.

Distributed systems architecture, distributed programming, network of computers, message passing, remote procedure calls, group communication, naming and membership problems, asynchrony, logical time, consistency, fault-tolerance, and recovery. (first offered 2004-2005)

176A. Introduction to Computer Communication Networks
(4) KONHEIM

Prerequisites: PSTAT 120A or ECE 139; open to computer science, computer engineering, and electrical engineering majors only.

Not open for credit to students who have completed Computer Science 176 or ECE 155 or ECE 155A.

Recommended preparation: PSTAT 120B.

Basic concepts in networking, the OSI model, error detection codes, flow control, routing, medium access control, and high-speed networks.

176B. Network Computing
(4) ALMEROTH

Prerequisite: Computer Science 176A.

Not open for credit to students who have completed ECE 155B or 194W.

Creating networked application systems, distributed objects, CORBA, JAVA, applets, mobile agents, naming, resource management, network security, internet multicasting and multimedia, wireless networks. (first offered 2001-2002)

178. Introduction to Cryptography
(4) KONHEIM

Prerequisites: Computer Science 10; and, Probability and Statistics 120A or 121A.

An introduction to the basic concepts and techniques of cryptography and cryptanalysis. Topics include: the Shannon Theory, classical systems, the Enigma machine, the Data Encryption Standard, public key systems, digital signatures, file security.

181B. Introduction to Computer Vision
(4) WANG

Same course as ECE 181B.

Overview of image processing, pattern recognition; image formation, binary images; edge detection, image segmentation, introduction to textured image analysis, optical flow, depth from stereo, shape from shading, shape from motion, shape representation techniques, issues in object recognition, casé study of some vision systems.

182. Multimedia Computing
(4) ALMEROTH

Prerequisites: Computer Science 176A and 176B.

Not open for credit to students who have completed ECE 160.

Introduction to multimedia and applications, including video conferencing, WWW, digital libraries, video on demand. Digital video and audio communication architectures, standards (including JPEG and MPEG2), multimedia storage and retrieval. Multimedia computing on the Internet and digital libraries. (first offered 2003-2004)

189. Senior Computer Systems Project
(4) GONZALEZ

Prerequisite: consent of instructor. Senior standing in computer engineering, computer science, or ECE.

Not open for credit to students who have completed ECE 189A-B.

Student groups design a significant computer-based project. Multiple groups may cooperate toward one large project. Each group works independently. Interaction among groups is via interface specifications and informal meetings.

Electrical and Computer Engineering Courses

Courses listed in this section represent only a partial listing of Engineering and ECE courses. This list is intended for the use of Computer Engineering majors. Refer to the ECE course section on page 84 for a full listing of courses.

LOWER DIVISION

Engineering 5A. Computations in Elementary Differential Equations and Linear Algebra
(1) STAFF

Prerequisites: Physics 1; Mathematics 5A (may be taken concurrently); open to College of Engineering majors only.

Ordinary differential equations, initial value problems, and linear algebra explored in an engineering context with the use of modern computer math tools. (F)

2A-B-C. Circuits, Devices, and Systems
(4-4-4) LONG

Prerequisites: Physics 2 and Mathematics 3A-B-C; open to ECE and CE majors only. Lecture, 3 hours; laboratory, 3 hours.

(1) Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems. (2) Electronic devices: principles, linear models, amplifiers, transformers. (3) Systems: feedback, instrumentation. (4) Digital electronics. (5) Laboratory: experimental evaluation of circuits, devices, and systems. Introduction to instrumentation. (F,W,S)

15A. Computer Organization
(3) MAREK-SADOWSKA

Prerequisite: ECE 2A.

Not open for credit to students who have completed ECE 15. Lecture, 3 hours, Discussion, 1 hour.

Digital logic circuits, integrated circuits, and digital functions. Elementary use of CAD tools for schematic capture, VHDL logic design and simulation. Data representation. Register transfer design and microoperations. Digital computer organization. (W)

15B. Assembler Programming
(3) MAREK-SADOWSKA

Prerequisite: ECE 15A.

Not open for credit to students who have completed Computer Science 30 or ECE 15. Lecture, 3 hours, Discussion, 1 hour.

Basic computer organization, elements of computer software, assembler language programming, subroutines, I/O programming, interrupt processing, and system programming. (S)

UPPER DIVISION

Engineering 101. Ethics in Engineering
(3) STAFF

Prerequisite: upper-division standing in engineering. Lecture, 3 hours.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W,S)

124A. VLSI Principles
(4) BREWER

Prerequisites: ECE 134, 137A, and 137B. Lecture, 3 hours; laboratory, 3 hours.

Semiconductor devices and device models, fabrication principles and design rules. Device layout and mask production. (F)

124D. VLSI Architecture and Design
(4) BREWER

Prerequisite: ECE 124A. Lecture, 3 hours; discussion, 1 hour.

Practical issues in VLSI circuit design, pad/pin limitations, clocking and interfacing standards, electrical packaging for high-speed and high-performance design. On-chip noise and crosstalk, clock and power distribution, architectural and circuit design constraints, interconnection limits and transmission line effects.

139. Probability and Statistics
(4) ILTIS

Prerequisites: ECE 130A-B. Lecture, 3 hours; discussion, 2 hours.

Fundamentals of probability, random variables, functions of random variables, expectation and high-order moments, characteristic functions, random sequences, laws of large numbers, hypothesis testing. (S)

147A. Feedback Control Systems - Theory and Design
(S) SMITH

Prerequisite: ECE 130C; open to ECE and CE majors only. Lecture, 3 hours; laboratory, 6 hours.

Feedback systems design, specifications in time and frequency domains. Analysis and synthesis of closed loop systems. Computer aided analysis and design. (F)

147B. Digital Control Systems - Theory and Design
(5) SMITH

Prerequisite: ECE 147A; open to ECE and CE majors only. Lecture, 3 hours; laboratory, 6 hours.

Analysis of sampled data feedback systems; state space description of linear systems; observability, controllability, pole assignment, state feedback, observers. Design of digital control systems. (W)

151. Distributed Systems
(4) MELLIAR-SMITH

Prerequisite: Computer Science 170.

Not open for credit to students who have completed Computer Science 171. Lecture, 3 hours; discussion, 1 hour.

Operation on multiple computers, distributed programming techniques and distributed programming languages, message passing, remote procedure invocation, group communication, asynchrony, causality, consistency, fault tolerance and recovery, group membership, naming, resource management, scheduling, specification, monitoring, testing and debugging. (not offered 2000-2001)

152A. Digital Design Principles
(S) STAFF

Prerequisites: ECE 15 or 15A-B or Computer Science 30. Open to engineering and computer science majors only. Lecture, 3 hours; laboratory, 6 hours.

Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of

combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits, synchronous and asynchronous operation, state minimization, hazards, and races. (F,W,SS)

152B. Digital Design Methodologies
(5) CHENG
Prerequisites: ECE 152A; open to ECE, CE, and computer science majors only. Lecture, 3 hours; laboratory, 6 hours.

Design methodologies of digital systems, the register and processor levels. Design of functional subsystems, including arithmetic processors, hardwired and microprogrammed control units, memory systems, and bussing systems. System organization including communication, input/output systems, and multiple CPU systems. (S)

153A. Hardware/Software Interface
(4) CHANG
Prerequisite: ECE 152A.

Same course as Computer Science 153A. Lecture, 3 hours; discussion, 1 hour.

Machine-level structures implementing the operating system abstraction; memory-mappers, multi-level interrupts, direct memory access techniques. Lowest-level software/firmware structures: micro-kernels, interpreters, emulators, threaded-code, real-time scheduling. Compilation and cross-compilation techniques; system initialization; validation and debugging; in-circuit testing. (F)

153B. Sensor and Peripheral Interface Design
(4) BUTNER
Prerequisites: ECE 152B and 153A. Lecture, 3 hours; laboratory, 3 hours.

Hardware description languages; field-programmable logic and ASIC design techniques. Mixed-signal techniques: A/D and D/A converter interfaces; video and audio signal acquisition, processing and generation, communication and network interfaces. (W)

154. Introduction to Computer Architecture
(4) BUTNER
Prerequisite: ECE 152A; open to ECE, CE, and computer science majors only.

Not open for credit to students who have completed Computer Science 154. Lecture, 4 hours.

Computer architecture representation methods. Classical processor/memory/switch aspects of computer architecture: instructions, addressing, interpretation and control, I/O systems, and memory hierarchies. Aspects of system architecture: protection mechanisms and hardware aids to supervision, specialized processors, and multi-processor/computer systems. Evaluation methods and system analysis. (F,S)

155A. Introduction to Computer Networks
(4) MOSER
Prerequisite: ECE 154 or Computer Science 154 or 170.

Not open for credit to students who have completed Computer Science 176 or 176A, or ECE 155 . Lecture, 3 hours; discussion, 1 hour.

OSI reference model, analog and digital transmission, local-area networks, packet switching, protocols, routing, flow control, performance, error recovery, security, client-server systems, Internet, and ATM. (W)

155B. Network Computing
(4) MOSER
Prerequisite: ECE 155A.

Not open for credit to students who have completed Computer Science 176B or ECE 194W. Lecture, 3 hours; discussion, 1 hour.

Creating networked application systems, distributed objects, CORBA, JAVA, applets, mobile agents, naming, resource management, network security, internet multicasting and multimedia, wireless networks. (S)

156A. Digital Design with VHDL and Synthesis
(4) CHENG
Prerequisite: ECE 152A. Lecture, 3 hours; laboratory, 3 hours.

Introduction to VHDL basic elements. VHDL simulation concepts. VHDL concurrent statements with examples and applications. VHDL subprograms, packages, libraries and design units. Writing VHDL for synthesis. Writing VHDL for finite state machines. Design case study. (not offered 2000-2001)

156B. Computer-Aided Design of VLSI Circuits
(4) MAREK-SADOWSKA
Prerequisite: ECE 156A. Lecture, 3 hours; laboratory, 3 hours.

Introduction to computer-aided simulation and synthesis tools for VLSI. VLSI system design flow, role of CAD tools, layout synthesis, circuit simulation, logic simulation, logic synthesis, behavior synthesis and test synthesis. (not offered 2000-2001)

157. Real-Time Embedded Control Computing
(4) SMITH
Prerequisite: ECE 153B. Lecture, 3 hours; laboratory, 3 hours.

Basic real-time embedded computing, real time and clock synchronization, preplanned, rate monotonic, deadline and least-laxity scheduling, application-specific languages, timed input and output, jitter, smoothing and debouncing, safety, fault tolerance. (not offered 2000-2001)

160. Multimedia Computing
(4) CHANG
Prerequisites: ECE 155A, 158, and 178.

Not open for credit to students who have completed Computer Science 182. Lecture, 3 hours; laboratory, 3 hours.

Introduction to multimedia and applications, including video conferencing, WWW, digital libraries, video on demand. Digital video and audio communication architectures, standards (including JPEG and MPEG2), multimedia storage and retrieval. Multimedia computing on the Internet and digital libraries. (not offered 2000-2001)

178. Fundamentals of Computer Image Processing
(4) MANJUNATH
Prerequisites: ECE 15 or ECE 15A-B or Computer Science 30; and, ECE 130A-B; open to ECE and CE majors only. Lecture, 3 hours; discussion, 1 hour.

Basic concepts in image processing. Techniques, capabilities, and limitations with emphasis on use of digital computer but also of optical and analog systems. Image sampling, reconstruction, enhancement, restoration, data extraction, and coding. Some hands-on laboratory experience is offered. (W)

181A. Introduction to Robotics: Robot Mechanics
(4) PADEN
Same course as ME 170A.

Recommended preparation: ME 16. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot kinematics and dynamics. Structure and operation of industrial robots. Robot performance: work space, velocity, precision, payload. Comparative discussion of robot mechanical designs. Actuators. Robot coordinate systems. Kinematics of position. Dynamics of manipulators. (F; may not be offered every year)

181B. Introduction to Computer Vision
(4) MANJUNATH
Prerequisites: upper-division standing.

Same course as Computer Science 181B. Lecture, 3 hours; discussion, 1 hour.

Overview of image processing, pattern recognition; image formation, binary images; edge detection, image segmentation, introduction to textured image analysis, optical flow, depth from stereo, shape from shading, shape from motion, shape representation techniques, issues in object recognition, case study of some vision systems. (S)

181C. Introduction to Robotics: Robot Control
(4) PADEN
Prerequisite: ECE 147A or ME 155A. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot control technology from open-loop manipulators and sensing systems, to single-joint servovalves and servomotors, to integrated adaptive force and position control using feedback from machine vision and touch sensing systems. Design emphasis on accurate tracking accomplished with minimal algorithm complexity. (S; may not be offered every year)

189A-B. Senior Computer Systems Project
(4-4) BUTNER
Prerequisite: consent of instructor. Senior standing in computer engineering, computer science, or ECE.

Not open for credit to students who have completed Computer Science 189. Lecture, 3 hours; laboratory, 3 hours.

Student groups design a significant computer-based project. Groups work independently with interaction among groups via interface specifications and informal meetings.

Computer Science

Department of Computer Science, Engineering I, Room 2106;
Telephone (805) 893-4321
Web site: www.cs.ucsb.edu

Chair: Divyakant Agrawal
Vice Chair: Ambuj Singh

Faculty

Anurag Acharya, Ph.D., Carnegie Mellon University, Assistant Professor (operating systems, architecture, compilers)

Divyakant Agrawal, Ph.D., SUNY at Stony Brook, Professor (distributed systems, and distributed databases)

Kevin Almeroth, Ph.D., Georgia Institute of Technology, Assistant Professor (computer networks and protocols, large-scale multimedia systems, performance evaluation and distributed systems)

Tevfik Bultan, Ph.D., University of Maryland, College Park, Assistant Professor (specification and automated analysis of concurrent systems, computer aided verification, model checking)

Peter R. Cappello, Ph.D., Princeton University, Professor (JAVA/Internet-based parallel computing, multiprocessor scheduling, market-based resource allocation, self-directed learning)

Ömer Egecioglu, Ph.D., UC San Diego, Professor (bijective and enumerative combinatorics, parallel algorithms, approximation algorithms, combinatorial algorithms)

Amr El Abbadi, Ph.D., Cornell University, Professor (fault-tolerant distributed systems, distributed databases, operating systems)

Teofilo Gonzalez, Ph.D., University of Minnesota, Professor (multimessage multicasting, VLSI placement and routing algorithms, scheduling theory; design and analysis of algorithms)

Urs Hölzle, Ph.D., Stanford, Associate Professor (object-oriented programming languages and systems, compilers, computer architecture, garbage collection)

Oscar H. Ibarra, Ph.D., UC Berkeley, Professor (theory of computation, design and analysis of

algorithms, computational complexity, parallel computing, VLSI, computer-aided design)

Richard A. Kemmerer, Ph.D., UC Los Angeles, Professor (specification and verification of systems, computer system security and reliability, programming and specification language design, software engineering)

Alan G. Konheim, Ph.D., Cornell University, Professor (computer communications, computer systems, modeling and analysis, cryptography)

Ming Li, Ph.D., Cornell University, Professor (computational biology, bioinformatics; design and analysis of algorithms)

** **Linda R. Petzold**, Ph.D., University of Illinois at Urbana–Champaign, Professor (numerical differential equations, numerical optimization, mathematical software, parallel computing, scientific computing)

Klaus E. Schauser, Ph.D., UC Berkeley, Associate Professor (parallel computing, parallel programming languages, compilers, computer architecture)

Ambuj Singh, Ph.D., University of Texas at Austin, Associate Professor (databases, parallel and distributed systems, formal specification and verification)

§ **Terence R. Smith**, Ph.D., Johns Hopkins University, Professor, Director of Center for Computational Modeling and Systems (spatial databases, techniques in artificial machine intelligence)

Jianwen Su, Ph.D., University of Southern California, Associate Professor (database systems, theory, and applications)

Yuan-Fang Wang, Ph.D., University of Texas at Austin, Professor (computer vision, computer graphics, artificial intelligence)

Tao Yang, Ph.D., Rutgers University, Associate Professor (algorithms and programming systems for parallel and distributed processing, program scheduling and compilation, parallel scientific computing)

Emeriti Faculty

John Bruno, Ph.D., The City College of New York, Professor Emeritus (applications of digital systems to engineering problems, distributed systems, scheduling theory, networks and graphs)

Marvin Marcus, Ph.D., UC Berkeley, Professor Emeritus (linear and multilinear algebra, scientific computation, numerical algorithms)

* **Roger C. Wood**, Ph.D., UC Los Angeles, Professor Emeritus (computer system modeling, design and analysis, computer architecture)

* Joint appointment with the Department of Electrical and Computer Engineering.

** Joint appointment with the Department of Mechanical and Environmental Engineering.

§ Joint appointment with the Department of Geography.

Affiliated Faculty

P. Michael Melliar-Smith, Ph.D. (Electrical and Computer Engineering)

The Department of Computer Science offers programs leading to the degrees of bachelor of arts and bachelor of science in computer science, and the M.S. and Ph.D. in computer science. The B.A. is a College of Letters and Science major; the B.S. is a College of Engineering major. Both the B.A. and B.S. degree programs in computer science are accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board.

One of the most important aspects of the Computer Science program at UCSB is the wealth of "hands-on" opportunities for students. UCSB has excellent computer facilities. Campus Instructional Computing makes accounts available to all students. Their facilities include late model PCs and MACs as well as NeXT workstations. Computer Science majors use the UNIX workstations in the Computer Science Instructional Lab and Engineering Computing Infrastructure computing facilities. Students doing special projects can gain access to machines at the NSF Supercomputing Centers via the Internet.

Graduate students have the additional computing facilities available in the Graduate Student Laboratory. Students working with faculty have access to the specialized research facilities within the Department of Computer Science: the Reliable Software, Theory of Computation, Distributed Systems, Parallel Systems, and Vision Laboratories.

The undergraduate major in computer science has a dual purpose: to prepare students for advanced studies and research and to provide training for a variety of careers in business, industry, and government.

Undergraduate counseling is provided under the direction of the assistant to the dean for undergraduate studies. A faculty advisor is also available to help with academic program planning. A department publication, *Undergraduate Studies in Computer Science*, describes degree offerings, new courses, and requirement changes.

Computer Engineering Major

This major is offered jointly by the Department of Computer Science and the Department of Electrical and Computer Engineering. For information about this major, refer to the section on Computer Engineering.

Admission to the Major

The pre-major requirements for the B.A. and the B.S. degrees in computer science are the same. Students intending to major in computer science should declare a pre-major when applying for admission to the university. It is strongly recommended that incoming freshmen complete a programming class prior to enrollment at UCSB. We recommend a Java course with emphasis in programming or a C++ programming course. Students who declare a pre-major are responsible for satisfying degree requirements in effect at the time of their declaration. When students have completed the preparation courses, they must petition to declare a change from pre-major to major status.

Undergraduate students enrolled in other majors may petition to enter the pre-computer science major at any time Option A below has been met or they may petition to enter the full major when Option B has been met:

Option A: Satisfactory completion at UCSB of at least four 4-unit courses required for the computer science pre-major (listed below), including at least two in computer science, with a pre-major grade-point average of at least 3.0.

Option B: Satisfactory completion of all the pre-major requirements with a University of California grade-point average of at least 2.75.

Please note: Pre-major status does not guarantee admission to major status. No course required for the preparation may be taken on a passed/not passed basis. To be admitted to the major, the student must complete the preparation with a minimum grade-point average of 2.75.

Undergraduate Program

Courses required for the pre-major or major, lower- or upper-division, inside or outside of the Department of Computer Science, cannot be taken for the passed/not passed grading option. They must be taken for letter grades.

Preparation for the major—B.S. and B.A.

Required: Mathematics 3A-B-C and 5A-B; Computer Science 10, 20, 30, 40, 50, and 60; and Probability and Statistics 120A. Courses identified as options within the preparation are considered equivalent; students may take one of them to satisfy the requirement but may not take more of them for credit.

Bachelor of Science—Computer Science

Upper-division major

The following courses are required: Computer Science 110A or 110B, 130A-B, 136, 154, 160, 162, 170, 186; Electrical and Computer Engineering 152A; and Probability and Statistics 120B. In addition, at least 16 units of major field electives are required. Prior approval of these electives must be obtained from the faculty advisor. In addition, the following courses are required: Physics 1, 2, 3, 3L and at least 8 units of science, mathematics, and engineering electives. Lists of approved science, mathematics, and engineering electives are available in the computer science office. All computer science majors are strongly encouraged to take Engineering 101, although it may not be used as an elective in the upper-division major.

Bachelor of Arts—Computer Science

Upper-division major

The courses required for the B.A. are the same as for the B.S. degree, with the following exceptions: Computer Science 160 is not required; 7, rather than 16, units of major field electives are required; a science sequence and two additional science courses are required. The science sequence should be selected from: Chemistry 1A-B-C and labs, or Physics 1, 2, 3, 3L or Physics 6A-B-C and labs. A list of approved additional science courses is available in the Computer Science office. All computer science majors are strongly encouraged to take Engineering 101, although it may not be used as an elective in the upper-division major.

Five-Year Bachelor of Science/ Master of Science Program

A combined B.S./M.S. program in computer science provides an opportunity for outstanding undergraduates to earn both degrees in five years. Additional information about this program is available from the undergraduate office or from the computer science graduate program assistant. Interested students should make their interest known to the department early in their junior year. In addition to fulfilling undergraduate degree requirements, B.S./M.S. degree candidates must meet Graduate Division degree requirements, including university requirements for academic residence and units of coursework as described in the chapter "Graduate Education at UCSB."

Graduate Program

In addition to departmental requirements, program applicants and candidates for graduate degrees must fulfill University requirements described in the chapter "Graduate Education at UCSB."

Admission

In addition to fulfilling the Graduate Division requirements for admission found in the chapter "Graduate Education at UCSB," the Department of Computer Science requires a bachelor's degree in some discipline of science, engineering, or mathematics.

Applicants must have a grade-point average of at least 3.0 in their last two years of undergraduate study. Satisfactory performance in the verbal, quantitative, analytical sections of the Graduate Record Examination is required of all applicants. Applicants whose native language is not English must receive a score of at least 600 (250 on the computer-based test) on the Test of English as a Foreign Language (TOEFL) prior to admission to UCSB. Applicants who have received a bachelor's or master's degree from a U.S. college or university are exempt from this requirement.

The Test of Spoken English is strongly recommended for international students applying for teaching assistant positions.

All fall application materials must be received by April 1. If an applicant wishes to be considered for fellowships and assistantships, all application materials must be received by January 1.

Master of Science Degree— Computer Science

Degree Requirements

The average time for completion of the M.S. degree is two years. Students must take 42 units of upper-division (excluding 190+ level courses) or graduate level courses (200+, 595, 596, 598). A major area of study has to be chosen. The major areas of study are (1) Foundations of computer science, (2) Systems, and (3) Applications. Four computer science graduate courses (200 level) must be taken from the major area and one computer science graduate course (200 level) must be taken from each of the other two major areas. The same course cannot be used to satisfy both major area and breadth requirements. The grade-point average over the major area courses should be at least 3.0. At least two units and at most six units of Computer Science 595 should be used towards the unit requirements.

Each student must complete a study plan that details the courses that will be taken in order to fulfill the course requirements. The study plan must be approved by the student's faculty advisor and departmental graduate advisor.

There are two options to obtain the master's degree: Thesis (Plan 1) and Examination (Plan 2). The specific requirements for the thesis and the comprehensive examination options are given below. Plan 2 is not available to students whose initial degree objective was the Ph.D. degree.

Plan 1 (thesis option). Students must complete 42 units of coursework approved by a computer science graduate advisor. Students must submit an acceptable thesis, completed under the supervision of a permanent computer science faculty member and approved by a thesis committee composed of three ladder faculty members from the Department of Computer Science. A maximum of 12 units of Computer Science 596 and 598 combined can be used toward unit requirements.

Plan 2 (examination option). Students must complete 42 units of coursework approved by a computer science advisor and pass a comprehensive examination. In addition to the six courses required for Plan 1 and Plan 2, 12 units of coursework also need to be completed. These 12 units must be computer science 100 level (excluding 190+) and 200 level courses. Of these additional units, eight must be 200 level courses. Plan 2 is available only to students who initially joined the graduate program as master of science candidates.

The comprehensive examination will be offered twice a year, in the eighth week of fall and spring quarters. Each student will list four courses, and a question from each of these courses will be asked on the examination. Three questions must be successfully answered.

Doctor of Philosophy— Computer Science

Admission

Students may apply directly to the Ph.D. program without a master's degree. However, a solid background in computer science or one or more fields of science and engineering is expected. Applicants to the Ph.D. program must have a grade-point average of at least 3.5 in their last two years of study. Requirements for the Ph.D. are typically completed in three to five years, depending on whether the student enters the program with an M.S. in computer science. Students entering this program should be committed to completing a Ph.D. The department discourages students petitioning to switch to the master's program; such petitions are approved only under exceptional circumstances.

Objective

The purpose of the Doctor of Philosophy program in computer science is to prepare students for research and teaching positions in universities and colleges, and for research and leadership positions in industry and government. The primary aim of the program is to train students in the methods of scientific inquiry and independent research. This is accomplished through advanced coursework and active participation with the faculty in their research programs. Doctor of Philosophy students are expected to have a broad knowledge of all fields of computer science and have a deep understanding of at least one of its areas. In addition to this requirement, a Doctor of Philosophy student must be up to date in all the developments in his/her major area of specialization. The most important component of the Doctor of Philosophy program is learning to perform independent and significant research in one's area of specialization.

Requirements for the Doctor of Philosophy degree typically are completed in four to six years, depending on whether or not a student enters the program with an M.S. in computer science. Students entering this program should be committed to completing a Ph.D. Switching to the master's program is strongly discouraged and will be approved only under special circumstances.

Course Requirements

To ensure sufficient breadth at the graduate level, Ph.D. students must complete at least eight graduate courses with a grade of B or better. Students are expected to be well-rounded in the following subject areas: foundations of computer science, systems, and applications. The set of courses that students plan to take must be endorsed by the academic advisor and another Department of Computer Science faculty member. A graduate level course taken in another department or another university can be counted if endorsed by the academic advisor and another faculty member.

Areas	*Associated courses*
Logic & Architecture	ECE 152A, CMPSC 154
Operating Systems & Networking	CMPSC 170, CMPSC 176A
Programming Languages & Translation	CMPSC 160, CMPSC 162
Algorithms & Data Structures	CMPSC 130A, CMPSC 130B
Theory of Computation	CMPSC 136, CMPSC 186

Exam Requirements

To earn a Ph.D., students must successfully complete four examinations: the screening examination; the oral major area examination (qualifying examination); the thesis proposal; and the dissertation defense.

The screening exam, which consists of ten subject areas (see table on previous page), is to ensure the student's breadth of knowledge at the undergraduate level. A subject area can be passed with either a passing grade in the screening examination or with a grade of A- or better in the course taught at UCSB. Although students are not required to pass all the subject exams at the same time, students are strongly encouraged to successfully complete all the subject areas as early in their graduate careers as possible. A student must satisfy this requirement within the first six quarters of residence in the Ph.D. program. Students on financial support should pass the exam within the first year in order to be considered for second-year support. The exam is offered twice a year: once during the fall quarter and once during the spring quarter. Although the exam material is chosen from the upper-division undergraduate curriculum, students must show a level of skill and a perspective appropriate for graduate work.

After passing the screening examination, a student forms a doctoral committee to supervise dissertation research. The doctoral committee must be chaired by a ladder faculty member from the department, although faculty from other UCSB departments may also be members. In special circumstances, non-UCSB faculty may be members. After the doctoral committee approves a student's proposed major area, the major area examination tests the student's knowledge of this area and any supporting areas (e.g., mathematics and electrical engineering). As a part of this examination, a student submits a set of relevant papers from the major area and prepares a brief presentation. Passing this oral examination allows this student to advance to candidacy for the doctoral degree.

After passing the major area examination, a student prepares a dissertation proposal that describes the dissertation topic, summarizes the relevant background literature, and presents a comprehensive research plan for the doctoral dissertation. The thesis proposal examination, which is oral, determines the feasibility of the research plan and the appropriateness of the research topic. The examination is administered by the student's doctoral committee.

The final examination is the defense of the candidate's dissertation, which consists of a public seminar and an evaluation by the candidate's doctoral committee on whether the student has successfully defended the dissertation.

Computer Science Courses

LOWER DIVISION

5AA-ZZ. Introduction to Computer Programming and Organization
(4) STAFF

Not open for credit to students who have completed Computer Science 10 or Engineering 1A-B-C or 2A-B-C or 3. May be repeated for credit provided letter designations are different.

Introduction to programming and the organization of computers. Basic programming concepts, algorithms, data and control structures, debugging, program design, documentation, structured programming. Sections are:

C. C Programming
PA. Pascal
JA. Java

10. Introduction to Computer Programming
(4) GONZALEZ, SU

Students with no prior programming background are encouraged to take Computer Science 5JA before 10.

Introduction to programming and computers. Basic programming concepts: algorithms, data and control structures, debugging, program design, documentation, structured programming, object oriented programming.

11AA-ZZ. Programming Language Laboratory
(1) STAFF

Different sections may be repeated. Sections not always offered.

Recommended preparation: knowledge of at least one programming language.

A self-paced course to allow a student who already possesses a working knowledge of at least one programming language an opportunity to learn other languages of interest. Each section studies a different language. Sections are:

FO. Fortran
JA. Java
LI. Lisp (2 units)
PA. Pascal

12. Introduction to C and UNIX
(4) BRUNO

Prerequisites: Computer Science 5 or 10 or Engineering 1A-B-C or Engineering 2A-B-C or Engineering 3.

Not open for credit by computer science majors or pre-majors. Not open for credit to students who have completed Computer Science 11C, 22, or 60.

Introduction to the UNIX system, C programming language, and data structures. Topics include: introduction to the UNIX system, C shell and shell scripts; UNIX file system and utilities; stacks, queues, lists, and trees.

20. Programming Methods
(4) SINGH

Prerequisite: Computer Science 10.

Programming techniques as follows: specification, representation, and manipulation of basic data structures such as stacks, queues, lists, trees, sets, arrays, etc. Searching and sorting techniques; predicate logic and program correctness; induction and recursion; running time analysis. Students write several medium-sized object-oriented programs.

30. Introduction to Computer Systems
(4) KONHEIM

Prerequisite: Engineering Sciences 1A-B-C or 2A-B-C or Computer Science 10.

Not open for credit to students who have completed ECE 15.

Basic computer organization; MC68000 assembly language programming. Gates, combinational circuits, flip-flops and the design and analysis of sequential circuits.

40. Foundations of Computer Science
(4) KONHEIM

Prerequisites: Computer Science 10 or 12; and Mathematics 3C.

Not open for credit to students who have completed Computer Science 26.

Propositional predicate logic, set theory, functions and relations, counting, mathematical induction and recursion (generating functions).

50. Programming Project
(4) HÖLZLE

Prerequisites: Computer Science 10 and 20.

Program design (modularization, designing for changeability, robustness, and testability), basic software engineering practices, principles of user interface design. Students design, implement, and test one or two extensive object-oriented programs.

60. Introduction to C, C++, and UNIX
(4) BRUNO

Prerequisites: Computer Science 10 and 20.

Reduced credit of 2 units will be given to students who have completed Computer Science 12 or 22.

Syntax and semantics of C and C++. Introduction to basic UNIX utilities and tools. Students complete several small projects that exercise their understanding of the material presented in class.

UPPER DIVISION

Engineering 100. Engineering Economic Analysis
(3) STAFF

Prerequisite: upper-division standing in engineering.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,W)

Engineering 101. Ethics in Engineering
(3) STAFF

Prerequisite: upper-division standing in engineering.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W,S)

Engineering 103. Advanced Engineering Writing
(4) STAFF

Prerequisite: Engineering 2A-B-C or Writing 1 or 1LK or 2 or 2LK or 50 or 50LK; and upper-division standing.

Analysis and practice of the forms of technical writing—reports, proposals, journal papers, abstracts, and presentations—that engineers and scientists will encounter in professional careers. Attention to research methods, document design, effective graphics, technical style, and electronic document preparation.

109A-B-C. Introduction to Mathematical Logic
(4-4-4) STAFF

Prerequisites: Mathematics 8 or Computer Science 40 for Computer Science 109A; Computer Science 109A for Computer Science 109B; Computer Science 109B for Computer Science 109C.

Same course as Mathematics 109A-B-C.

An introduction to mathematical logic with applications in computer science and mathematics. Topics include propositional and predicate calculi; models; proof systems; decidability and undecidability; automated theorem-proving; unification; logic programming; and program verification.

110A. Foundations of Scientific Computing
(4) YANG

Prerequisites: Mathematics 5B; and, Computer Science 12 or 22 or 60.

Introduction to the design and analysis of algorithms for basic numerical problems in computational science. Emphasis on appropriate data structures, languages, programming methodology, and performance evaluation of numerical software.

110B. Parallel Scientific Computing
(4) YANG

Prerequisites: Mathematics 5B; Computer Science 20; and, Computer Science 12 or 22 or 60.

Fundamentals of parallel computing, algorithm design for numerical computation on parallel architectures, parallel languages and tools for scientific computing. Emphasis on appropriate data structures, languages, programming methodology and performance evaluation of numerical software.

125. Introduction to Data Structures and Algorithms
(4) AGRAWAL

Prerequisite: Computer Science 12 or 11C.

Not open to computer science pre-majors or majors.

Data structures and applications. Mathematical induction, recursion. Analysis of algorithms, space and time complexity. Stacks, queues, deques, singly- and doubly-linked lists. Complex linked structures. Binary trees, traversals, basic operations on trees. Sorting, searching.

130A. Data Structures and Algorithms I
(4) GONZALEZ

Prerequisites: Computer Science 12 or 22 or 60; and, Computer Science 26 or 40; and, Computer Science 20; open to computer science and computer engineering majors only.

The study of data structures and applications. Correctness proofs and techniques for the design of correct programs. Internal and external searching. Hashing and height balanced trees. Analysis of sorting algorithms. Memory management. Graph traversal techniques and their applications.

130B. Data Structures and Algorithms II
(4) GONZALEZ

Prerequisites: Computer Science 26 or 40; and Computer Science 130A.

Design and analysis of computer algorithms. Correctness proofs and techniques for the design of correct programs. Solution of recurrence relations. Design techniques: divide and conquer, greedy strategies, dynamic programming, backtracking, and local search. Applications of techniques to problems from several disciplines.

136. Automata and Formal Languages
(4) EGECIOGLU

Prerequisites: Computer Science 26 or 40; open to computer science and computer engineering majors only.

Finite automata and regular expressions; properties of regular languages; pushdown automata and context free grammars/languages; properties of context-free languages.

153A. Hardware/Software Interface
(4) BRUNO

Prerequisite: ECE 152A.

Same course as ECE 153A.

Machine-level structures implementing the operating system abstraction; memory-mappers, multi-level interrupts, direct memory access techniques. Lowest-level software/firmware structures: micro-kernels, interpreters, emulators, threaded-code, real-time scheduling. Compilation and cross-compilation techniques; system initialization; validation and debugging; in-circuit testing. (first offered 2002-2003)

154. Computer Architecture
(4) SCHAUSER

Prerequisite: ECE 152A.

Not open for credit to students who have received credit for ECE 154.

Introduction to the architecture of computer systems. Topics include: central processing units, memory systems, channels and controllers, peripheral devices, interrupt systems, software versus hardware trade-offs.

160. Translation of Programming Languages
(4) EL ABBADI

Prerequisites: Computer Science 130B and 136; open to computer science and computer engineering majors only, or by consent of department.

Study of the structure of compilers. Topics include: lexical analysis; syntax analysis including LL and LR parsars; type checking; run-time environments; intermediate code generation; and compiler-construction tools.

162. Programming Languages
(4) HÖLZLE

Prerequisite: Computer Science 130A; open to computer science and computer engineering majors only, or by consent of department.

Concepts of programming languages: scopes, parameter passing, storage management; control flow, exception handling; encapsulation and modularization mechanism; reusability through genericity and inheritance; type systems; procedural, object-oriented, functional, and logic programming languages.

165. Machine Intelligence
(4) SMITH

Prerequisites: Computer Science 20; and, Computer Science 26 or 40.

Machine intelligence is concerned with computational techniques for representing and reasoning about complex objects. Topics covered include some of the machine intelligence programming languages, data structures, control structures, and problem solving techniques used in both research and application.

170. Operating Systems
(4) AGRAWAL

Prerequisites: Computer Science 130A or 125; and, Computer Science 154; open to computer science, computer engineering, or ECE majors, or by consent of department.

Basic concepts of operating systems. The notion of a process; interprocess communication and synchronization; input-output, file systems, memory management.

171. Distributed Systems
(4) EL ABBADI

Prerequisite: Computer Science 170.

Not open for credit to students who have completed ECE 151.

Distributed systems architecture, distributed programming, network of computers, message passing, remote procedure calls, group communication, naming and membership problems, asynchrony, logical time, consistency, fault-tolerance, and recovery. (first offered 2004-2005)

172. Software Engineering
(4) KEMMERER

Prerequisites: Computer Science 130A; open to computer science majors only or by consent of department.

Recommended preparation: Computer Science 130B.

Software engineering is concerned with long-term, large-scale programming projects. Software management, cost estimates, problem specification and analysis, system design techniques, system testing and performance evaluation, and system maintenance. Students will design, manage, and implement a medium-sized project.

174. Data Base Management Systems
(4) SU

Prerequisite: Computer Science 130B; open to computer science majors only or by consent of department.

Database system architectures, relational and object-oriented databases, relational algebra, relational calculus, SQL, QBE, integrity constraints, normal forms and database design, query processing and optimization, indexing, transactions, concurrency control, and crash recovery.

176A. Introduction to Computer Communication Networks
(4) KONHEIM

Prerequisites: PSTAT 120A or ECE 139; open to computer science, computer engineering, and electrical engineering majors only.

Not open for credit to students who have completed Computer Science 176 or ECE 155 or ECE 155A.

Recommended preparation: PSTAT 120B.

Basic concepts in networking, the OSI model, error detection codes, flow control, routing, medium access control, and high-speed networks.

176B. Network Computing
(4) ALMEROTH

Prerequisite: Computer Science 176A.

Not open for credit to students who have completed ECE 155B or 194W.

Creating networked application systems, distributed objects, CORBA, JAVA, applets, mobile agents, naming, resource management, network security, internet multicasting and multimedia, wireless networks. (first offered 2001-2002)

177. Computer Security
(4) KEMMERER

Prerequisite: Computer Science 170.

Introduction to the basics of computer security and privacy. Analysis of technical difficulties of producing secure computer information systems that provide guaranteed controlled sharing. Examination and critique of current systems, methods, certification.

178. Introduction to Cryptography
(4) KONHEIM

Prerequisites: Computer Science 10; and, Probability and Statistics 120A or 121A.

An introduction to the basic concepts and techniques of cryptography and cryptanalysis. Topics include: the Shannon Theory, classical systems, the Enigma machine, the Data Encryption Standard, public key systems, digital signatures, file security.

180. Computer Graphics
(4) WANG

Prerequisite: Computer Science 130B.

X Window System; Xlib and widget programming; 2D drawing and painting algorithms; 2D transform and clipping; 3D transform, viewing, and clipping; overview of PHIGS graphics standard; graphics hardware; interactive devices and techniques; half-tone and dithering techniques; hidden surface removal algorithms.

181B. Introduction to Computer Vision
(4) WANG

Same course as ECE 181B.

Overview of image processing, pattern recognition; image formation, binary images; edge detection, image segmentation, introduction to textured image analysis, optical flow, depth from stereo, shape from shading, shape from motion, shape representation techniques, issues in object recognition, case study of some vision systems.

182. Multimedia Computing
(4) ALMEROTH

Prerequisites: Computer Science 176A and 176B.

Not open for credit to students who have completed ECE 160.

Introduction to multimedia and applications, including video conferencing, WWW, digital libraries, video on demand. Digital video and audio communication architectures, standards (including JPEG and MPEG2), multimedia storage and retrieval. Multimedia computing on the Internet and digital libraries. (first offered 2003-2004)

186. Theory of Computation
(4) IBARRA

Prerequisite: Computer Science 136; open to computer science majors only or by consent of department.

Not open for credit to students who have completed Mathematics 150A.

Turing machines; computability and unsolvability; computational complexity; intractability and NP-completeness.

189. Senior Computer Systems Project
(4) GONZALEZ

Prerequisite: consent of instructor; senior standing in computer engineering, computer science or ECE.

Not open for credit to students who have completed ECE 189A-B.

Student groups design a significant computer-based project. Multiple groups may cooperate toward one large project. Each group works

independently; interaction amoung groups is via interface specifications and informal meetings.

190AA-ZZ. Special Topics in Computer Science
(1-5) STAFF

Prerequisite: consent of instructor.

Sections may not be repeated without the consent of the chair.

These variable unit courses provide for the study of topics of current interest in computer science.

A. Artificial Intelligence
B. Computer Graphics
C. Pattern Recognition
D. Program Verification
E. Computer Architectures
F. Algorithms and Complexity
G. Mathematical Theory of Computation
H. Semantic Models
I. Software Systems
J. General
K. Computer Systems Modeling and Analysis
L. Scientific Computation

192. Projects in Computer Science
(4) STAFF

Prerequisite: consent of instructor.

May be repeated once for credit but only 4 units may be applied to the major.

Projects in computer science for advanced undergraduate students.

193. Internship in Industry
(1-4) STAFF

Prerequisites: consent of instructor and department.

Not more than 4 units per quarter; may not be applied as science, mathematics, and engineering electives. May be repeated with faculty/chair approval.

Special projects for selected students. Offered in conjunction with selected industrial and research firms under direct faculty supervision. Prior departmental approval required.

194. Group Studies in Computer Science
(1-5) STAFF

May be repeated for credit to a maximum of 8 units but only 4 units may be applied to the major.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular department curriculum.

196. Undergraduate Research
(2-4) STAFF

Prerequisites: upper-division standing, consent of the instructor.

Must have a minimum 3.0 grade-point average for the preceding three quarters. May be repeated for up to 12 units. No more than 4 units may be applied to departmental electives.

Research opportunities for undergraduate students. Students will be expected to give regular oral presentations, actively participate in a weekly seminar, and prepare at least one written report on their research.

199A-B-C. Independent Studies in Computer Science
(1-5, 1-5, 1-5) STAFF

Prerequisites: upper-division standing; (2); (3) have completed at least two upper-division courses in computer science.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Computer Science 199A-B is a two-quarter in-progress course with grades for both quarters assigned upon completion of 199B. Computer Science 199C is a one-quarter course with grade assigned at the end of the quarter.

GRADUATE COURSES

211A. Matrix Analysis and Computation
(4) PETZOLD

Prerequisite: consent of instructor.

Same course as ECE 210A, ME 210A, Mathematics 206A, and Chemical Engineering 211A.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Graduate level-matrix theory with introduction to matrix computations. SVD's, pseudoinverses, variational characterization of eigenvalues, perturbation theory, direct and iterative methods for matrix computations.

211B. Numerical Simulation
(4) PETZOLD

Prerequisite: consent of instructor.

Same course as ECE 210B, ME 210B, Mathematics 206B, and Chemical Engineering 211B.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Linear multistep methods and Runge-Kutta methods for ordinary differential equations: stability, order, and convergence. Stiffness. Differential algebraic equations. Numerical solution of boundary value problems.

211C. Numerical Solution of Partial Differential Equations—Finite Difference Methods
(4) PETZOLD

Prerequisite: consent of instructor.

Same course as ECE 210C, ME 210C, Mathematics 206C, and Chemical Engineering 211C.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Finite difference methods for hyperbolic, parabolic and elliptic PDEs, with application to problems in science and engineering. Convergence, consistency, order and stability of finite difference methods. Dissipation and dispersion. Finite volume methods. Software design and adaptivity.

211D. Numerical Solution of Partial Differential Equations—Finite Element Methods
(4) PETZOLD

Prerequisite: consent of instructor.

Same course as ECE 210D, ME 210D, Mathematics 206D, and Chemical Engineering 211D.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Weighted residual and finite element methods for the solution of hyperbolic, parabolic, and elliptical partial differential equations, with application to problems in science and engineering. Error estimates. Standard and discontinuous Galerkin methods.

220. Automata-Based Complexity
(4) IBARRA

Prerequisite: Computer Science 186.

Topics include: models of computation; time and space complexity classes (e.g., P, NP, Co-NP, and PSPACE), efficient reducibilities, complete problems; lower bounds; the polynomial hierarchy.

230A-B. Design and Analysis of Algorithms
(4-4) GONZALEZ

Prerequisites: Computer Science 130A-B.

Not open for credit to students who have received credit for Mathematics 254.

Topics include: NP-completeness and reducibility; approximation algorithms; polynomial and fully polynomial time approximation schemes; amortized complexity; graph algorithms; lower bound techniques; probabilistic analysis of algorithms; randomized algorithms; linear programming.

232. Complexity of Parallel Algorithms
(4) EGECIOGLU

Prerequisite: Computer Science 186.

Current research topics in the area of parallel algorithms and complexity. Topics include: models of parallel computation, Boolean circuits, complexity classes, the class NC, parallel arithmetic operations, graph algorithms, and matrix operations.

240A. High-Performance Parallel Systems and Languages
(4) SCHAUSER

Prerequisites: Computer Science 154 and 160.

Overview of parallel architectures and communication; parallel programming paradigms; performance models of parallel computation; parallel algorithms and applications; systems and compilers for parallel languages.

240B. Parallel Computing and Program Parallelization
(4) YANG

Prerequisites: Computer Science 130A and 160.

Parallel programming; representation of parallelism, program dependence analysis, loop transformation; program and data partitioning, locality optimization; task scheduling and load balancing; parallelizing compilers and run-time support.

260. Advanced Topics in Translation
(4) SCHAUSER

Prerequisites: Computer Science 160 and 162.

Theoretical aspects of translation. Topics include: parsing algorithms for LR and LL grammars, intermediate code generation, flow analysis, optimization; run-time environments, attributed grammars, error processing. (May not be offered each year)

262. Semantics of Programming Languages
(4) STAFF

Prerequisites: Computer Science 160 and 162.

Methods for the formal description of programming languages; various approaches to formal semantics: operational, denotational, axiomatic, attribute grammars; complimentary definitions.

263. Modern Programming Languages and Their Implementation
(4) HÖLZLE

Prerequisites: Computer Science 154, 160, and 162.

Recommended preparation: Computer Science 260.

Topics central to modern programming languages and their implementation: garbage collection; memory system performance; characteristics and optimization of object-oriented languages; type systems and type inference; run-time compilation.

265. Advanced Topics in Machine Intelligence
(4) SMITH

Prerequisite: Computer Science 165.

Course may be repeated for credit.

Topics covered include advanced programming techniques for representing and reasoning about complex objects, and various applications of such techniques including expert systems, natural language processors, image understanding systems, and machine learning.

266. Formal Specification and Verification
(4) KEMMERER

Prerequisites: Computer Science 130A-B; Computer Science 186.

Recommended preparation: Computer Science 262 is.

Introduction to existing specification and verification systems, and the underlying theory and techniques of verifying the correctness of algorithms with respect to specifications. This subject can be considered as the combination of specification and verification techniques, programming language semantics, and formal logic.

270A. Advanced Topics in Operating Systems
(4) STAFF

Prerequisite: undergraduate course in operating systems and computer architecture.

Operating system implementation issues. Topics include process and storage management, file systems, I/O subsystems, multiprocessor and distributed operating systems, computer networking.

270B. Principles of Distributed Systems
(4) EL ABBADI

Prerequisite: Computer Science 170.

This course provides an introduction to the basic problems in distributed systems and the various tools used to solve them. Of primary interest is the issue of fault-tolerance. Topics include event ordering, clocks, synchronization, mutual exclusion, agreement, and fault-tolerance.

272. Software Engineering
(4) KEMMERER

Prerequisite: Computer Science 172.

Principles of software engineering disciplines emphasizing requirements analysis, specification design, coding, testing and correctness proofs, maintenance, and management. Students will use a number of software engineering tools.

273. Data and Knowledge Bases
(4) SU

Prerequisite: Computer Science 186.

The focus is on the study of relational and post-relational data models and their query languages of different styles (algebraic, calculus, and deductive): complexity, expressive power, optimization, and database design.

274. Transaction Management in Distributed Databases
(4) EL ABBADI

Prerequisite: Computer Science 170.

Topics include: data models, semantics; data integrity; database design; serializability theory, concurrency control, recovery, distributed databases.

276. Distributed Computing and Computer Networks
(4) KONHEIM

Prerequisite: Computer Science 270A.

Distributed processing: task partitioning, interprocess communication, synchronization, reconfiguration, file allocation, and deadlock problems; computer communication network models, analysis and synthesis. (May not be offered each year)

278. Discrete Event Simulation
(4) STAFF

Prerequisites: Probability and Statistics 120A or 121A; and and Computer Science 130A.

Discrete-event simulation for performance evaluation of complex systems. Design of simulation models, random numbers, simulation of discrete and continuous random variates and random processes, statistical analysis of output data, variance reduction techniques.

280. Computer Graphics
(4) WANG

Prerequisite: Computer Science 180.

Special topics in computer graphics including: curves and curved surfaces, visual perception of colors and color models; shading models; shadow generation; texture mapping; solid textures; stereographics; helmet-mounted display; graphics hardware/architecture; solid modeling; physically-based modeling; fractals and graphtals; volume rendering; scientific visualization.

281B. Advanced Topics in Computer Vision
(4) WANG

Prerequisite: Computer Science 181B.

Same course as ECE 281B.

Advanced topics in computer vision: image sequence analysis, spatio-temporal filtering, camera calibration and hand-eye coordination, robot navigation, shape representation, physically-based modeling, multi-sensory fusion, biological models, expert vision systems, and other topics selected from recent research papers.

290AA-ZZ. Special Topics in Computer Science
(1-5) STAFF

Prerequisite: consent of instructor.

These variable-unit courses provide for the study of topics of current interest in computer science. Special topics are coded as follows.

A. Artificial Intelligence
B. Computer Graphics
C. Pattern Recognition
D. Program Verification
E. Computer Architectures
F. Algorithms and Complexity
G. Mathematical Theory of Computation
H. Semantic Models
I. Software Systems
J. General
K. Computer Systems Modeling and Analysis
L. Scientific Computation
N. Computer Networks

501. Techniques of Engineering Teaching
(2) STAFF

Prerequisite: consent of graduate advisor.

This course is required for new teaching assistants and may be taken only once. No unit credit allowed toward advanced degree.

An initial 1-2 day workshop on teaching techniques followed by practical experience in teaching, videotaping, and meetings with instructional consultation staff to improve techniques.

502. Teaching of Computer Science
(1-4) STAFF

Prerequisite: Computer Science 501 (may be taken concurrently).

No unit credit allowed toward advanced degree.

Procedures and techniques for teaching computer science gained through actual teaching of lecture courses, leading discussion sections, and/or teaching laboratories. Meetings will be held as needed to discuss problems, methods and procedures.

594. Seminar in Computer Science
(1-S) STAFF

Prerequisite: consent of instructor and department.

A seminar course offered on an irregular basis. Provides an in-depth discussion of advanced topics of general interest and broadens the scope of knowledge in computer science.

595AA-ZZ. Group Studies in Computer Science
(1-S) STAFF

Prerequisite: consent of instructor.

May be repeated for credit provided letter designations are different.

Special seminars focusing on topics of interest to faculty and graduate students. These seminars provide critical review of research in various areas of computer science.

A. Artificial Intelligence
B. Computer Graphics
C. Pattern Recognition
D. Program Verification
E. Computer Architectures
F. Algorithms and Complexity
G. Mathematical Theory of Computation
H. Semantic Models
I. Software Systems
J. General
K. Computer Systems Modeling and Analysis
L. Scientific Computation
N. Computer Networks

596A-B-C. Directed Research
(2-12, 2-12, 2-12) STAFF

Computer Science 596A-B is a two-quarter in-progress course with grades for both quarters assigned upon completion of 596B. Computer Science 596C is a one-quarter course with grade assigned at the end of the quarter.

Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member.

597. Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per examination. Maximum of 12 units per quarter. Instructor is normally student's major professor or chair of doctoral committee. S/U grading.

Individual studies for M.S. comprehensive examination and Ph.D. examinations.

598. Master's Thesis Research and Preparation
(1-12) STAFF

Prerequisite: consent of graduate advisor.

For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF

Prerequisite: consent of chair of student's doctoral committee.

Research and preparation of dissertation.

Electrical and Computer Engineering

Department of Electrical and Computer Engineering, Building 380, Room 101; Telephone (805) 893-2269 or (805) 893-3821

Web site: www.ece.ucsb.edu

Chair: Hua Lee
Vice Chair: Stephen I. Long

Faculty

Daniel J. Blumenthal, Ph.D., University of Colorado at Boulder, Associate Professor (fiber-optic networks, wavelength and subcarrier division multiplexing, photonic packet switching, signal processing in semiconductor optical devices, wavelength conversion, microwave photonics)

John E. Bowers, Ph.D., Stanford University, Professor, Director of Multidisciplinary Optical Switching Technology Center (high-speed photonic and electronic devices and integrated circuits, fiber optic communication, semiconductors, laser physics and mode-locking phenomena, compound semiconductor materials and processing)

Forrest D. Brewer, Ph.D., University of Illinois at Urbana-Champaign, Associate Professor (VLSI and computer system design automation, theory of design and design representations, symbolic techniques in high level synthesis)

Steven E. Butner, Ph.D., Stanford University, Professor (computer architecture, VLSI design of CMOS and gallium-arsenide ICs with emphasis on distributed organizations and fault-tolerant structures)

Shivkumar Chandrasekaran, Ph.D., Yale University, Assistant Professor (numerical analysis, numerical linear algebra, scientific computation)

Edward Chang, Ph.D., Stanford University, Assistant Professor (multimedia systems, database systems, and distributed systems)

Kwang-Ting (Tim) Cheng, Ph.D., UC Berkeley, Professor (design automation, VLSI and MCM testing, design synthesis, design verification, algorithms)

§ **Larry A. Coldren**, Ph.D., Stanford University, Professor, Director of Optoelectronics Technology Center (semiconductor integrated optoelectronics, vertical-cavity lasers, widely-tunable lasers, optical fiber communication, growth and planar processing techniques)

Nadir Dagli, Ph.D., Massachusetts Institute of Technology, Professor (design, fabrication, and modeling of photonic integrated circuits, ultrafast electrooptic modulators, solid state microwave and millimeter wave devices; experimental study of ballistic transport in quantum confined structures)

§ **Steven P. DenBaars**, Ph.D., University of Southern California, Professor (metalorganic vapor phase epitaxy, optoelectronic materials, compound semiconductors, indium phosphide and gallium nitride, photonic devices)

§ **Arthur C. Gossard**, Ph.D., UC Berkeley, Professor (epitaxial crystal growth, artificially structured materials, semiconductor structures for optical and electronic devices, quantum confinement structures)

§ **Evelyn Hu**, Ph.D., Columbia University, Professor, Director of Center for Quantized Electronic Structures, Director of National Nanofabrication Users Network (high-resolution fabrication techniques for semiconductor device structures, process-related materials damage, contact/interface studies, superconductivity)

Ronald Iltis, Ph.D., UC San Diego, Professor (digital spread spectrum communications, spectral estimation and adaptive filtering)

Atac Imamoglu, Ph.D., Stanford University, Professor (quantum optics, lasers without population inversion, quantum coherence in semiconductors, stochastic wave-function methods)

Petar V. Kokotovic, Ph.D., USSR Academy of Sciences, Professor, Director of Center for Control Engineering and Computation (sensitivity analysis, singular perturbations, large-scale systems, non-linear systems, adaptive control, automotive and jet engine control)

§ **Herbert Kroemer**, Dr. rer. nat., University of Göttingen, Donald W. Whittier Professor in Electrical Engineering (general solid-state and device physics, heterostructures, molecular beam epitaxy, compound semiconductor materials and devices, superconductivity)

Hua Lee, Ph.D., UC Santa Barbara, Professor (image system optimization, high-performance image formation algorithms, synthetic-aperture radar and sonar systems, acoustic microscopy, microwave nondestructive evaluation, dynamic vision systems)

Stephen I. Long, Ph.D., Cornell University, Professor (semiconductor devices and integrated circuits for high speed digital and RF analog applications)

Upamanyu Madhow, Ph.D., University of Illinois, Associate Professor (spread-spectrum and multiple-access communications, space-time coding, and internet protocols)

B.S. Manjunath, Ph.D., University of Southern California, Associate Professor (image processing, computer vision, pattern recognition, neural networks, learning algorithms, content based search in multimedia databases)

Malgorzata Marek-Sadowska, Ph.D., Technical University of Warsaw, Poland, Professor (design automation, computer-aided design, integrated circuit layout, logic synthesis)

P. Michael Melliar-Smith, Ph.D., University of Cambridge, Professor (fault tolerance, formal specification and verification, distributed systems, communication networks and protocols, asynchronous systems)

Umesh Mishra, Ph.D., Cornell University, Professor (high-speed transistors, semiconductor device physics, quantum electronics, wide band gap materials and devices, design and fabrication of millimeter-wave devices, in-situ processing and integration techniques)

Sanjit K. Mitra, Ph.D., UC Berkeley, Professor (digital signal and image processing, computer-aided design and optimization)

Louise E. Moser, Ph.D., University of Wisconsin, Professor (distributed systems, computer networks, software engineering, fault-tolerance, formal specification and verification, performance evaluation)

Behrooz Parhami, Ph.D., UC Los Angeles, Professor (parallel architectures and algorithms, computer arithmetic, computer design, dependable and fault-tolerant computing)

§ **Pierre M. Petroff**, Ph.D., UC Berkeley, Professor (self assembling nanostructures in semiconductors and ferromagnetic materials, spectroscopy of nanostructures, nanostructure devices, semiconductor device reliability)

Ian B. Rhodes, Ph.D., Stanford University, Professor (mathematical system theory and its applications with emphasis on stochastic control, communication, and optimization problems, especially those involving decentralized information structures or parallel computational structures)

Mark J.W. Rodwell, Ph.D., Stanford University, Professor, Director of Compound Semiconductor Research Laboratories (heterojunction bipolar transistors, high frequency integrated circuit design, electronics beyond 100 GHz)

Kenneth Rose, Ph.D., California Institute of Technology, Associate Professor, Co-Director of Center for Information Processing Research (information theory, source and channel coding, image coding, communications, pattern recognition)

John J. Shynk, Ph.D., Stanford University, Professor (adaptive filtering, array processing, wireless communications, blind equalization, neural networks)

Roy Smith, Ph.D., California Institute of Technology, Associate Professor (robust control with an emphasis on the modeling, identification, and control of uncertain systems, applications and experimental work including process control, flexible structures, automotive systems, semiconductor manufacturing, levitated magnetic bearings and dynamic aeromaneuvering of interplanetary spacecraft)

Andrew Teel, Ph.D., UC Berkeley, Professor (control design and analysis for nonlinear dynamical systems, input-output methods, actuator nonlinearities, applications to aerospace problems)

Emmanouel Varvarigos, Ph.D., Massachusetts Institute of Technology, Associate Professor (data networks, routing and communication aspects of parallel computation, parallel processing architectures, communication systems)

Pochi Yeh, Ph.D., California Institute of Technology, Professor (phase conjugation, nonlinear optics, dynamic holography, optical computing, optical interconnection, neural networks, and image processing)

Robert York, Ph.D., Cornell University, Professor (high-power/high-frequency devices and circuits, quasi-optics, antennas, electromagnetic theory, nonlinear circuits and dynamics, microwave photonics)

Emeriti Faculty

Jorge R. Fontana, Ph.D., Stanford University, Professor Emeritus (quantum electronics, particularly lasers, interaction with charged particles)

Allen Gersho, Ph.D., Cornell University, Professor, Co-Director of Center for Information Processing Research (speech, audio, image, and video compression, quantization and signal compression techniques, and speech processing)

Glenn R. Heidbreder, D. Eng., Yale University, Professor Emeritus (communication theory, signal processing in radar and digital communication systems; digital image processing)

Steven M. Horvath, Ph.D., Harvard University, Professor Emeritus (biomedical engineering, environmental stress physiology)

George L. Matthaei, Ph.D., Stanford University, Professor Emeritus (circuit design techniques for passive and active microwave, millimeter-wave and optical integrated circuits, circuit problems of high-speed digital integrated circuits)

§ **James L. Merz**, Ph.D., Harvard University, Professor Emeritus (optical properties of semiconductors, including guided-wave and integrated optical devices, semiconductor lasers, optoelectronic devices, native defects in semiconductors, low-dimensional quantum structures)

Venkatesh Narayanamurti, Ph.D., Cornell University, Professor Emeritus (transport, semiconductor heterostructures, nanostructures, scanning tunneling microscopy and ballistic electron emission microscopy, phonon physics)

Philip F. Ordung, D. Eng., Yale University, Professor Emeritus (general device physics, solar cells, charge-coupled devices)

John G. Skalnik, D. Eng., Yale University, Professor Emeritus (solar cells, general device technology, effects of non-ideal structures)

Glen Wade, Ph.D., Stanford University, Professor Emeritus (optical, microwave, and acoustical systems theory and experiments, with emphasis on acoustic imaging; computer processing; enhancement of images; computer image reconstruction)

§§ **Roger C. Wood**, Ph.D., UC Los Angeles, Professor Emeritus (computer system modeling, design, and analysis, computer architecture, and instructional use of computers)

§ Joint appointment with the Department of Materials.

§§ Joint appointment with the Department of Computer Science.

Affiliated Faculty

Eric McFarland, Ph.D., M.D. (Chemical Engineering)

Bradley E. Paden, Ph.D. (Mechanical and Environmental Engineering)

Anna Stefanopoulou, Ph.D. (Mechanical and Environmental Engineering)

Electrical and Computer Engineering is a broad field encompassing many diverse areas such as computers and digital systems, control, communications, electronics, signal processing, electromagnetics, electro-optics, physics of electronic devices, and device fabrication. As in most areas of engineering, knowledge of mathematics and the natural sciences is combined with engineering fundamentals and applied to the theory, design, analysis, and implementation of devices and systems for the benefit of society.

The Department of Electrical and Computer Engineering offers programs leading to the degrees of bachelor of science in electrical engineering or bachelor of science in computer engineering. The undergraduate curriculum in electrical engineering is designed to provide students with a solid background in mathematics, physical sciences, and traditional electrical engineering topics: electronic devices and fabrication, electronic circuits and systems, computer hardware and software, electromagnetics and optics, communications, signal processing, and control systems. A wide range of program options, including computer engineering; microwaves; communications, control, and signal processing; and solid state is offered. The department's electrical engineering undergraduate program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, and it is one of the degrees recognized in all fifty states as leading to eligibility for registration as a professional engineer.

Graduate studies leading to the M.S. and Ph.D. degrees in electrical and computer engineering are offered in three major areas of specialization: computer engineering; communications, control, and signal processing; and electronics and photonics.

In addition, the department offers certificate programs for those with a B.S. degree or higher who wish to advance their knowledge in a specific area or to undertake a new area. Approved programs are in the following areas: circuits and signal processing; control and communication systems; computer engineering; and electronics and photonics.

The undergraduate major in electrical engineering prepares students for a wide range of positions in business, government, and private industrial research, development, and manufacturing organizations. The graduate programs offer educational opportunities at an advanced level, leading at the M.S. level to increased career opportunities in the foregoing positions, and at the Ph.D. level to careers in research and teaching and positions of professional leadership.

Students who complete a major in electrical engineering may be eligible to pursue a California teaching credential. Interested students should consult the credential advisor in the Graduate School of Education.

Counseling is provided to undergraduates by the assistant to the dean for undergraduate studies in the College of Engineering. Students who plan to change to a major in the department should consult the assistant to the dean. Departmental faculty advisors are assigned to students to assist them in choosing senior elective courses.

Counseling is provided to graduate students through the ECE graduate advisor. Individual faculty members are also available for help in academic planning.

Laboratory Facilities

In addition to formal classroom lectures and studies, the department places strong emphasis on the inclusion of laboratory and computational experience in a student's program of study. To support this experience, the department and the campus maintain an extensive complement of relevant laboratory and computational facilities. Instructional laboratory facilities are available to support undergraduate courses in circuits, electronics, digital systems, communications, control, signal and image processing, microwaves, and solid-state device fabrication. Students may access microcomputers and workstations in the Microcomputer Laboratory or the College of Engineering ECI and CAD Laboratories.

The Department also maintains modern well-equipped facilities for research in communications, control, signal processing, image processing, scientific computation, VLSI design and testing, computer architecture, fault-tolerant computing, microwaves, optoelectronics, and solid state microelectronics. All research laboratories include or have access to modern computer facilities. Workstations in the various research laboratories have access via a local area network to a wide range of computing resources. The solid state research facilities include laboratories for crystal growth by molecular beam epitaxy and metal-organic CVD, microfabrication and processing, analog and digital integrated circuit design, and compound-semiconductor optoelectronic device and materials research.

Honors

Eta Kappa Nu. Eta Kappa Nu is the national electrical engineering honor society. Students in their junior year of study in electrical engineering who rank in the upper quarter of their class and senior year students who rank in the upper third of their class are invited into membership of the Epsilon Tau (UCSB) chapter of Eta Kappa Nu. Graduate students and faculty also belong to this honor society. In addition to regular meetings on campus, the organization participates in regional and national society activities and sponsors local projects to serve the campus and the community. Further information on Eta Kappa Nu is available at the department office.

Computer Engineering Major

This major is offered jointly by the Department of Computer Science and the Department of Electrical and Computer Engineering. For information about this major, refer to the section on Computer Engineering.

Undergraduate Program

Bachelor of Science—Electrical Engineering

Courses required for the pre-major or major, inside or outside of the Department of Electrical and Computer Engineering, cannot be taken for the passed/not passed grading option. They must be taken for letter grades.

Preparation for the major

All undergraduate majors in the department are required to meet a set of minimum unit and grade-point requirements and a set of General Education requirements which are common to all undergraduate majors in the College of Engineering. In addition, required preparation for the major consists of the following lower-division courses (or their equivalents if taken elsewhere): Engineering 3 and 5A-B-C, Writing 2E and 50E; Electrical and Computer Engineering 2A-B-C and 15A-B; Chemistry 1A-B and 1AL-BL; Mathematics 3A-B-C and 5A-B-C; Physics 1, 2, 3, 4, 3L, 4L; and Computer Science 12 and 40.

The assistant to the dean can suggest a recommended study plan for electrical engineering freshmen and sophomores. Each junior is assigned a departmental faculty advisor who must be consulted in planning the junior and senior year programs.

Upper-division major

The upper-division requirements consist of a set of required courses and a minimum of 32 units of additional departmental elective courses selected from a wide variety of specialized courses. All departmental elective programs must contain at least two sequences, each consisting of two or more related courses. Required upper-division courses for the major are: Electrical and Computer Engineering 130A-B, 132, 134, 137A-B, 139, 152A; and Engineering 101.

The required 32 units of departmental electives are taken primarily in the senior year, and they permit students to develop depth in specialty areas of their choice. A student's elective course program must be approved by a departmental faculty advisor. The advisor will check the program to ensure satisfaction of the departmental requirements of depth, breadth, engineering science, and engineering design. A wide variety of elective programs will be considered acceptable. Sample programs include those with emphasis in solid state, in microwaves and communications, in communications, control, and signal processing, and in computer engineering.

Two matters should be noted: (1) students who fail to attain a grade-point average of at least 2.0 in the major may be denied the privilege of continuing in the major, (2) a large majority of electrical and computer engineering courses have prerequisites which must be completed successfully. Students will not be permitted to take any ECE course if they received a grade of F in one or more of its prerequisites.

Five-Year Bachelor of Science/ Master of Science Program

A combined B.S./M.S. program in Electrical Engineering provides an opportunity for outstanding undergraduates to earn both degrees in five years. Additional information about this program is available from the undergraduate office. Interested students should contact the undergraduate office early in the

junior year, because they need to plan their junior year classes differently from other undergraduates. Transfer students should notify the office of their interest in the program at the earliest opportunity. In addition to fulfilling undergraduate degree requirements, B.S./M.S. degree candidates must meet Graduate Division degree requirements, including university requirements for academic residence and units of coursework as described in the chapter, "Graduate Education at UCSB."

Graduate Program

In addition to departmental requirements, program applicants and candidates for graduate degrees must fulfill University requirements described in the chapter "Graduate Education at UCSB."

Admission

The department offers graduate programs at the M.S. and Ph.D. levels in electrical and computer engineering. In addition, the department offers a certificate program in electrical and computer engineering for practicing engineers who do not wish to enroll in a full degree program. The graduate programs are open to those who have a bachelor's degree in electrical engineering, computer engineering, computer science, other areas of engineering, or in mathematics, physics, or other related fields of science. Applicants with degrees in fields other than electrical and computer engineering or computer science may be required to complete undergraduate prerequisite courses. Fundamental subject areas required include mathematics through differential equations and advanced calculus, a full year of college-level physics, and introductory computer programming.

All applicants for admission to graduate status are required to present evidence of a high level of technical skill, scholarship, and aptitude for electrical and computer engineering. This evidence normally is provided through a combination of undergraduate transcripts, scores on the verbal, quantitative, and analytical sections (required) and advanced portion (optional) of the Graduate Record Examination, letters of recommendation, and accounts of professional goals and experience. Applicants whose native language is not English must receive a score of at least 560 (220 on the computer-based test) on the Test of English as a Foreign Language (TOEFL) prior to admission to UCSB. Applicants who have received a bachelor's or master's degree from a U.S. college or university are exempt from this requirement.

The department emphasizes graduate education at the highest level and intends that most of its graduate students will be enrolled in the Ph.D. program. Admission to the Ph.D. program is open to applicants who hold a master's degree or its equivalent in either electrical and computer engineering or computer science or related fields and who demonstrate unusual ability and promise for professional success. It is also open to applicants of exceptional promise directly on completion of a baccalaureate degree program. Applicants with only a baccalaureate degree who intend to seek the Ph.D. degree should apply for simultaneous admission to the M.S and Ph.D. programs. It should be noted, however, that continuation in the Ph.D. program is dependent upon proof of competency to pursue research at the Ph.D. level and upon obtaining a research supervisor.

Master of Science—Electrical and Computer Engineering

Degree Requirements

Graduate studies toward the M.S. degree are administered under either Plan 1, which requires coursework and a thesis, or Plan 2, which requires coursework and a comprehensive examination. Under either plan, students are required to complete at least 42 units of credit approved by the faculty advisor and the departmental graduate advisor. Under either plan, M.S. degree students must select a program of courses forming a coherent pattern directed toward an educational objective, including both depth in a particular area of specialization and breadth through other course offerings. M.S. students must plan their program of study around one of the three graduate emphases: computer engineering; communications, control, and signal processing; and electronics and photonics.

Plan 1 (thesis option). Students in this plan are required to (1) complete 42 units approved by the department, including no fewer than 14 units of coursework numbered 200-299 or 594, and no more than 12 units of upper-division coursework at the undergraduate level, and (2) submit an acceptable thesis based on research carried out by taking up to 8 units of 598 and up to 8 units of 596. Further details are available from the ECE Graduate Office or graduate advisor.

Plan 2 (examination option). Students in this plan are required to (1) complete 42 units approved by the department, including no fewer than 18 units of coursework numbered 200-299 or 594, and no more than 16 units of upper-division coursework at the undergraduate level, and (2) pass a comprehensive examination. Further details are available from the ECE Graduate Office or graduate advisor.

Doctor of Philosophy—Electrical and Computer Engineering

Degree Requirements

Immediately upon admission to studies toward the Ph.D. degree, students are required to develop a formal study plan which includes both (1) an appropriate level of coursework and special studies to provide depth of knowledge in a specialty area, and (2) additional coursework in two technical areas that are distinct from the specialty area. The study plan must be approved by the faculty advisor and the department graduate advisor and may be modified during the course of the student's program. There is no rigid requirement concerning the total number of units of graduate work that must be taken, but doctoral students are expected to take all available courses in their area of interest that the faculty deem relevant to their programs. In addition, they are expected to take other courses for breadth. There is no foreign language requirement in the program.

All students in the Ph.D. program are required to pass the departmental screening examination. When the examination is passed, the student selects a Ph.D. committee. This committee administers an oral qualifying examination at such time as it deems the student to be adequately prepared and the university residence requirements have been satisfied. After the oral examination has been passed, the student is eligible for advancement to candidacy for the Ph.D. degree.

Students must prepare a dissertation based on original research in a subject area approved by the Ph.D. committee. The dissertation must be defended in an open oral dissertation defense examination.

Certificate Program—Electrical and Computer Engineering

For completion of the certificate program, students are required to complete five courses with at least a 3.0 grade-point average. Three of these courses must be at the graduate level, and all courses must be taken for letter grades. Courses specifically required of undergraduate majors cannot be included for credit. Students must complete the requirements for a certificate in three years from the date of admission to the program. Suitable courses within each of the five approved programs are listed below. Students who wish to use courses not listed in this section must secure the approval of the department graduate advisor in advance.

Courses suitable for a certificate in circuits and signal processing:

ECE 124A-B-C, 130C, 145A-B-C, 147B, 149, 152A-B-C-D, 158, 178, 201D, 202A-B, 208A-B-C, 210A, 230A-B, 235, 242, 245, 258A, 259, 271A-B, 277B, 278A-B; Computer Science 180.

Courses suitable for a certificate in control and communication systems:

ECE 124A-B-C, 145A-B, 146A-B, 147A-B, 149, 152A-B-C-D, 158, 205A, 210A, 230A-B, 231A, 235, 240A-B, 242, 243, 247, 249, 258A, 270A-B-C, 271A-B.

Courses suitable for a certificate in computer engineering:

ECE 124A-B-C, 152A-B-C-D, 154, 155, 158, 178, 224A-B, 252A-B-C, 254A-B-C, 256A-B-C-D, 257A-B, 258A, 259, 277B, 278A, 279A-B; Computer Science 130A-B, 162, 170, 172, 174, 176, 180, 260, 262, 270A-B, 272, 274, 276, 278, 280.

Courses suitable for a certificate in electronics and photonics:

ECE 124A-B-C, 144A-B, 145A-B, 162A-B-C, 178, 201A-B-C-D, 202A-B, 208A-B-C, 211A-B, 213, 215A-B, 216A-B, 220A-B-C, 221A-B, 222, 224A-B, 225, 228A-B, 260A-B, 278A-B-C; Physics 123A-B, 141, 253.

Electrical and Computer Engineering Courses

Many of the ECE courses are restricted to ECE majors only. Please check the quarterly Schedule of Classes. Instructor and quarter offered are subject to change.

LOWER DIVISION

Engineering 3. Introduction to C Programming
(3) STAFF

Prerequisites: open to College of Engineering freshmen only, except computer science, pre-computer science, and computer engineering majors.

Introduction to computers: word processing, spreadsheets, and C programming language. Basic programming concepts, algorithms, data structures, debugging, and program design.

Engineering 5A. Computations in Elementary Differential Equations and Linear Algebra
(1) STAFF

Prerequisites: Physics 1; Mathematics 5A (may be taken concurrently); open to College of Engineering majors only.

Ordinary differential equations, initial value problems, and linear algebra explored in an engineering context with the use of modern computer math tools. (F)

Engineering 5B. Computations in Vector Calculus
(1) STAFF

Prerequisites: Physics 1; Mathematics 5B (may be taken concurrently); open to College of Engineering majors only.

Vector differential calculus and vector integral calculus explored in an engineering context with the use of modern computer math tools. (W)

Engineering 5C. Computations in Ordinary and Partial Differential Equations
(1) STAFF

Prerequisites: Physics 1; Mathematics 5C (may be taken concurrently); open to College of Engineering majors only.

Nonlinear systems, Fourier analysis, boundary value problems, and partial differential equations explored in an engineering context with the use of modern math tools. (S)

2A-B-C. Circuits, Devices, and Systems
(4-4-4) LONG

Prerequisites: Physics 2 and Mathematics 3A-B-C (for ECE 2A): ECE 2A for 2B: ECE 2B for 2C; open to ECE and CE majors only (for all). Lecture, 3 hours; laboratory, 3 hours.

(1) Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems. (2) Electronic devices: principles, linear models, amplifiers, transformers. (3) Systems: feedback, instrumentation. (4) Digital electronics. (5) Laboratory: experimental evaluation of circuits, devices, and systems. Introduction to instrumentation. (F,W,S)

6A-B. Circuits and Electronics
(3-3) STAFF

Prerequisites: Physics 2 and Mathematics 3A-B-C. For ECE 6B, 6A is required. Open to engineering majors except ECE. Lecture, 2 hours; laboratory, 3 hours.

Introduction to basic electrical circuits and electronics. Includes Kirchhoff's laws, network responses, power distribution, diodes, transistor circuits, analog computation, and instrumentation. (W,S)

15A. Computer Organization
(3) MAREK-SADOWSKA

Prerequisite: ECE 2A.

Not open for credit to students who have completed ECE 15. Lecture, 3 hours; discussion, 1 hour.

Digital logic circuits, integrated circuits, and digital functions. Elementary use of CAD tools for schematic capture, VHDL logic design and simulation. Data representation. Register transfer design and microoperations. Digital computer organization. (W)

15B. Assembler Programming
(3) MAREK-SADOWSKA

Prerequisite: ECE 15A.

Not open for credit to students who have completed Computer Science 30 or ECE 15. Lecture, 3 hours; discussion, 1 hour.

Basic computer organization, elements of computer software, assembler language programming, subroutines, I/O programming, interrupt processing, and system programming. (S)

UPPER DIVISION

Engineering 100. Engineering Economic Analysis
(3) STAFF

Prerequisite: upper-division standing in engineering. Lecture, 3 hours.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,W)

Engineering 101. Ethics in Engineering
(3) STAFF

Prerequisite: upper-division standing in engineering. Lecture, 3 hours.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W,S)

Engineering 103. Advanced Engineering Writing
(4) STAFF

Prerequisites: Engineering 2A-B-C or Writing 1 or 1LK or 2 or 2LK or 50 or 50LK; and upper-division standing.

Analysis and practice of the forms of technical writing—reports, proposals, journal papers, abstracts, and presentations—that engineers and scientists will encounter in professional careers. Attention to research methods, document design, effective graphics, technical style, and electronic document preparation.

102A. High-Frequency Transistor Circuits
(4) RODWELL

Prerequisite: ECE 137A. Lecture, 3 hours; laboratory, 3 hours.

Techniques for the design of transistor circuits at high frequencies. Topics include transistor high-frequency figures of merit, stability factors, the Linvill design technique, and the use of scattering parameters in amplifier design.

105. Statistical Thermodynamics
(4) KROEMER

Prerequisites: Chemistry 1C, Mathematics 5C, Physics 4, and ECE 134. Lecture, 4 hours.

Statistical distribution of energy. Nature of thermal equilibrium, definition of temperature and entropy. Heat and work. Partition functions. Free energy. Chemical potential. Applications: electrons in semiconductors; radiation, electrical noise, lasers; Carnot limits to energy conversion efficiencies; alloys. (S)

107A-B-C. Directed Research
(1-4) STAFF

Prerequisite: consent of instructor.

Acceptable for departmental senior electives by petition only. ECE 107A-B-C may be repeated to a maximum of 12 units. Variable hours.

Directed research projects open to qualified undergraduates in electrical engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. (F,W,S,SS)

124A. VLSI Principles
(4) BREWER

Prerequisites: ECE 134, 137A, and 137B. Lecture, 3 hours; laboratory, 3 hours.

Semiconductor devices and device models, fabrication principles and design rules. Device layout and mask production. (F)

124B-C. Integrated Circuit Design and Fabrication
(5-5) BOWERS

Prerequisites: ECE 137A-B or 132. Lecture, 4 hours; laboratory, 3 hours.

Theory, fabrication, and characterization of solid state devices and circuits including P-N junctions, capacitors, bipolar and MOS devices. NMOS circuits will be designed, simulated, fabricated, and tested. The physics and performance of VLSI processing steps will be discussed and analyzed using computer simulations. (W,S)

124D. VLSI Architecture and Design
(4) BREWER

Prerequisite: ECE 124A. Lecture, 3 hours; discussion, 1 hour.

Practical issues in VLSI circuit design, pad/pin limitations, clocking and interfacing standards, electrical packaging for high-speed and high-performance design. On-chip noise and crosstalk, clock and power distribution, architectural and circuit design constraints, interconnection limits and transmission line effects.

125. High Speed Digital Integrated Circuit Design
(4) LONG

Prerequisite: ECE 124A or 137A. Lecture, 4 hours.

Very high speed digital IC technologies and circuits. Silicon and compound semiconductor devices. Interfaces, interconnections, packaging, testing of high speed circuits. Low power, high speed design technologies. Application of CAD tools for design project. (S)

130A-B. Signal Analysis and Processing
(4-4) RHODES

Prerequisites: Mathematics 5A-B. Lecture, 3 hours; discussion, 2 hours.

Analysis of discrete- and continuous-time linear systems in the time and frequency domains. Superposition and convolution. Bilateral and unilateral Laplace and Z transforms. Fourier series, Fourier transforms, discrete Fourier transforms. Filtering, modulation, and sampling. Feedback. (F,W)

130C. Signal Analysis and Processing
(4) CHANDRASEKARAN

Prerequisites: ECE 130A-B. Lecture, 3 hours; discussion, 2 hours.

Basic techniques for the analysis of linear models in electrical engineering: Gaussian elimination, vector spaces and linear equations, orthogonality, determinants, eigenvalues and eigenvectors, systems of linear differential equations, positive definite matrices, singular value decomposition. (S)

132. Introduction to Solid State Electronic Devices
(4) MISHRA

Prerequisites: Physics 4, Mathematics 5A, and ECE 2A and 2B (may be taken concurrently). Lecture, 3 hours; discussion, 2 hours.

Electrons and holes in semiconductors; doping (p and n); state occupation statistics; transport properties of electrons and holes; p-n junction diodes; I-V, C-V, and switching properties of p-n junctions; introduction to bipolar transistors, MOSFETs and JFETs. (F)

134. Introduction to Fields and Waves
(4) DAGLI, YORK

Prerequisites: Physics 3 and Mathematics 5A-B-C. Lecture, 3 hours; discussion, 2 hours.

Introduction to applied electromagnetics and wave phenomena in high frequency electronic circuits and systems. Waves on transmission-lines, elements of electrostatics and magnetostatics and applications, plane waves, examples and applications to RF, microwave, and optical systems. (F)

137A. Circuits and Electronics I
(4) RODWELL

Prerequisites: ECE 2A-B, 130A, and 132; open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Analysis of single stage and multistage transistor circuits, including biasing, gain, and impedances. High-frequency and low-frequency analysis of active and passive networks and their resulting transient response (Laplace methods). Analysis and design of feedback circuits. Bode and Nyquist stability criteria. (W)

137B. Circuits and Electronics II
(4) RODWELL

Prerequisites: ECE 137A and ECE 2C (may be taken concurrently); open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Analysis of single stage and multistage transistor circuits, including biasing, gain, and impedances. High-frequency and low-frequency analysis of active and passive networks and their resulting transient response (Laplace methods). Analysis and design of feedback circuits. Bode and Nyquist stability criteria. (S)

139. Probability and Statistics
(4) ILTIS

Prerequisites: ECE 130A-B. Lecture, 3 hours; discussion, 2 hours.

Fundamentals of probability, random variables, functions of random variables, expectation and high-order moments, characteristic functions, random sequences, laws of large numbers, hypothesis testing. (S)

140. Probabilistic Methods of Signal and System Analysis
(4) ILTIS

Prerequisites: ECE 130A-B. ECE majors only. Lecture, 3 hours; discussion, 2 hours.

Fundamentals of probability, random variables, random processes, spectral analysis, signal analysis in linear systems with random excitation. (F,S)

144A-B. Electromagnetic Fields and Waves
(4-4) YORK

Prerequisite: ECE 134. Lecture, 3 hours; laboratory, 3 hours.

Waves on transmission lines, Maxwell's equations, skin effect, propagation and reflection of electromagnetic waves, microwave integrated circuit principles, metal and dielectric waveguides, resonant cavities, antennas. Microwave and optical device examples. Selected laboratory experiments and experience with modern microwave CAD software. (W,S)

145A. Communication Electronics
(S) LONG

Prerequisites: ECE 137A-B. Lecture, 3 hours; laboratory, 6 hours.

Analog communication circuits 1 MHz to 1GHz with emphasis on receivers. S-parameter design techniques, nonideal components, distortion, low noise amplifier design and characterization, system level analysis. (F)

145B. Communication Electronics
(S) LONG

Prerequisite: ECE 145A; ECE majors only. Lecture, 3 hours; laboratory, 6 hours.

Analog communication circuits 1 MHz to 1GHz with emphasis on receivers. Design and evaluation of RF components: mixers, oscillators, PLL, IF amplifier, FM demodulator, frequency synthesis. (W)

145C. Special Topics in Electronics
(4) RODWELL

Prerequisite: ECE 145B. Open to ECE majors only. Lecture, 2 hours; laboratory, 6 hours.

Selected topics of current interest in analog electronics. The specific areas covered will vary with class interests. (S)

146A. Analog Communication Theory and Techniques
(4) ILTIS

Prerequisites: ECE 130A-B-C and 140. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Modulation theory. AM, FM, PM, and analog pulse modulation and demodulation techniques. Noise models in electronic circuits. System noise and performance calculations. (W)

146B. Digital Communication Theory and Techniques
(S) SHYNK

Prerequisites: ECE 130A-B-C, 140, and 146A. Open to ECE majors only. Lecture, 3 hours; laboratory, 6 hours.

The quantitative measure of information. Introduction to the fundamental theorems of information theory and their implications in system design. Quantization and coding. Pulse code modulation (PCM). Matched filters, PCM modems, elementary decision-theory concepts. Concepts of error detection and correction. Coded PCM systems. Feedback communication systems. (S)

147A. Feedback Control Systems - Theory and Design
(S) SMITH

Prerequisite: ECE 130C; open to ECE and CE majors only. Lecture, 3 hours; laboratory, 6 hours.

Feedback systems design, specifications in time and frequency domains. Analysis and synthesis of closed loop systems. Computer aided analysis and design. (F)

147B. Digital Control Systems - Theory and Design
(S) SMITH

Prerequisite: ECE 147A; open to ECE and CE majors only. Lecture, 3 hours; laboratory, 6 hours.

Analysis of sampled data feedback systems; state space description of linear systems; observability, controllability, pole assignment, state feedback, observers. Design of digital control systems. (W)

149. Active and Passive Network Synthesis
(4) MITRA

Prerequisites: ECE 137A-B. Open to ECE majors only. Lecture, 3 hours; discussion, 1 hour.

This course combines the areas of electronics and network theory in the subject of passive and active network design. Topics include passive synthesis, optimization techniques, approximations to ideal filters, distributed networks, sensitivity and the modern design techniques, and applications of active filters. (S)

151. Distributed Systems
(4) MELLIAR-SMITH

Prerequisite: Computer Science 170.

Not open for credit to students who have completed Computer Science 171. Lecture, 3 hours; discussion, 1 hour.

Operation on multiple computers, distributed programming techniques and distributed programming languages, message passing, remote procedure invocation, group communication, asynchrony, causality, consistency, fault tolerance and recovery, group membership, naming, resource management, scheduling, specification, monitoring, testing and debugging. (not offered 2000-2001)

152A. Digital Design Principles
(S) STAFF

Prerequisites: ECE 15 or 15A-B or Computer Science 30. Open to engineering and computer science majors only. Lecture, 3 hours; laboratory, 6 hours.

Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits, synchronous and asynchronous operation, state minimization, hazards, and races. (F,W,SS)

152B. Digital Design Methodologies
(S) CHENG

Prerequisites: ECE 152A; open to ECE, CE, and computer science majors only. Lecture, 3 hours; laboratory, 6 hours.

Design methodologies of digital systems, the register and processor levels. Design of functional subsystems, including arithmetic processors, hardwired and microprogrammed control units, memory systems, and bussing systems. System organization including communication, input/output systems, and multiple CPU systems. (S)

153A. Hardware/Software Interface
(4) PARHAMI

Prerequisite: ECE 152A.

Same course as Computer Science 153A. Lecture, 3 hours; discussion, 1 hour.

Machine-level structures implementing the operating system abstraction; memory-mappers, multi-level interrupts, direct memory access techniques. Lowest-level software/firmware structures: micro-kernels, interpreters, emulators, threaded-code, real-time scheduling. Compilation and cross-compilation techniques; system initialization; validation and debugging; in-circuit testing. (F)

153B. Sensor and Peripheral Interface Design
(4) BUTNER

Prerequisites: ECE 152B and 153A. Lecture, 3 hours; laboratory, 3 hours.

Hardware description languages; field-programmable logic and ASIC design techniques. Mixed-signal techniques: A/D and D/A converter interfaces; video and audio signal acquisition, processing and generation, communication and network interfaces. (W)

154. Introduction to Computer Architecture
(4) BUTNER

Prerequisite: ECE 152A; open to ECE, CE, and computer science majors only.

Not open for credit to students who have completed Computer Science 154. Lecture, 4 hours.

Computer architecture representation methods. Classical processor/memory/switch aspects of computer architecture: instructions, addressing, interpretation and control, I/O systems, and memory hierarchies. Aspects of system architecture: protection mechanisms and hardware aids to supervision, specialized processors, and multi-processor/computer systems. Evaluation methods and system analysis. (F,S)

155A. Introduction to Computer Networks
(4) MOSER

Prerequisite: ECE 154 or Computer Science 154 or 170.

Not open for credit to students who have completed Computer Science 176 or 176A, or ECE 155 . Lecture, 3 hours; discussion, 1 hour.

OSI reference model, analog and digital transmission, local-area networks, packet switching, protocols, routing, flow control, performance, error recovery, security, client-server systems, Internet, and ATM. (W)

155B. Network Computing
(4) MOSER

Prerequisite: ECE 155A.

Not open for credit to students who have completed Computer Science 176B or ECE 194W. Lecture, 3 hours; discussion, 1 hour.

Creating networked application systems, distributed objects, CORBA, JAVA, applets, mobile agents, naming, resource management, network security, internet multicasting and multimedia, wireless networks. (S)

156A. Digital Design with VHDL and Synthesis
(4) CHENG

Prerequisite: ECE 152A. Lecture, 3 hours; laboratory, 3 hours.

Introduction to VHDL basic elements. VHDL simulation concepts. VHDL concurrent statements with examples and applications. VHDL subprograms, packages, libraries and design units. Writing VHDL for synthesis. Writing VHDL for finite state machines. Design case study. (not offered 2000-2001)

156B. Computer-Aided Design of VLSI Circuits
(4) MAREK-SADOWSKA

Prerequisite: ECE 156A. Lecture, 3 hours; laboratory, 3 hours.

Introduction to computer-aided simulation and synthesis tools for VLSI. VLSI system design flow, role of CAD tools, layout synthesis, circuit simulation, logic simulation, logic synthesis, behavior synthesis and test synthesis. (not offered 2000-2001)

157. Real-Time Embedded Control Computing
(4) SMITH

Prerequisite: ECE 153B. Lecture, 3 hours; laboratory, 3 hours.

Basic real-time embedded computing, real time and clock synchronization, preplanned, rate monotonic, deadline and least-laxity scheduling, application-specific languages, timed input and

output, jitter, smoothing and debouncing, safety, fault tolerance. (not offered 2000-2001)

158. Digital Signal Processing
(4) MITRA

Prerequisites: ECE 130A-B. Open to ECE majors only.

Recommended preparation: Mathematics 124A. Lecture, 3 hours; laboratory, 3 hours.

Discrete signals and systems, convolution, z-transforms, discrete Fourier transforms, digital filters. (F)

160. Multimedia Computing
(4) MANJUNATH

Prerequisites: ECE 155A, 158, and 178.

Not open for credit to students who have completed Computer Science 182. Lecture, 3 hours; laboratory, 3 hours.

Introduction to multimedia and applications, including video conferencing, WWW, digital libraries, video on demand. Digital video and audio communication architectures, standards (including JPEG and MPEG2), multimedia storage and retrieval. Multimedia computing on the Internet and digital libraries. (not offered 2000-2001)

162A. The Quantum Description of Electronic Materials
(4) HU

Prerequisites: ECE 130A-B, 134, and 105; open to ECE and materials majors only.

Same course as Materials 162A. Lecture, 4 hours.

Electrons as particles and waves, Schrodinger's equation and illustrative solutions. Tunnelling. Atomic structure, the exclusion principle and the periodic table. Bonds. Free electrons in metals, periodic potentials and energy bands. (F)

162B. Fundamentals of the Solid State
(4) COLDREN

Prerequisite: ECE 162A; open to ECE and materials majors only.

Same course as Materials 162B. Lecture, 3 hours; discussion, 1 hour.

Crystal lattices and the structure of solids, with emphasis on semiconductors. Lattice vibrations, electronic states and energy bands. Electrical and thermal conduction. Dielectric and optical properties. Semiconductor devices: diffusion, p-n junctions and diode behavior. (W)

162C. Optoelectronic Materials and Devices
(4) IMAMOGLU

Prerequisites: ECE 162A, 162B. Open to ECE and materials majors only. Lecture, 3 hours; discussion, 1 hour.

Optical transitions in solids. Direct and indirect gap semiconductors. Luminescence. Excitons and photons. Fundamentals of optoelectronic devices: semiconductor lasers, LED's photoconductors, solar cells, photo diodes, modulators. Photoemission. Integrated optics. (S)

177. Visual System Analysis
(4) STAFF

Prerequisite: open to upper-division students only.

Same course as Psychology 130. Open to non-majors.

Recommended preparation: calculus, linear algebra and some computer programming experience. Lecture, 3 hours.

A systems approach to understanding vision. Topics will typically include transduction, signal detection, space and motion perception, color vision, and pattern classification. Special emphasis will be placed on comparing computational models with quantitative description of human visual performance.

178. Fundamentals of Computer Image Processing
(4) MANJUNATH

Prerequisites: ECE 15 or ECE 15A-B or Computer Science 30; and, ECE 130A-B; open to ECE and CE majors only. Lecture, 3 hours; discussion, 1 hour.

Basic concepts in image processing. Techniques, capabilities, and limitations with emphasis on use of digital computer but also of optical and analog systems. Image sampling, reconstruction, enhancement, restoration, data extraction, and coding. Some hands-on laboratory experience is offered. (W)

181A. Introduction to Robotics: Robot Mechanics
(4) PADEN

Same course as ME 170A.

Recommended preparation: ME 16. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot kinematics and dynamics. Structure and operation of industrial robots. Robot performance: work space, velocity, precision, payload. Comparative discussion of robot mechanical designs. Actuators. Robot coordinate systems. Kinematics of position. Dynamics of manipulators. (F; may not be offered every year)

181B. Introduction to Computer Vision
(4) MANJUNATH

Prerequisites: upper-division standing.

Same course as Computer Science 181B. Lecture, 3 hours; discussion, 1 hour.

Overview of image processing, pattern recognition; image formation, binary images; edge detection, image segmentation, introduction to textured image analysis, optical flow, depth from stereo, shape from shading, shape from motion, shape representation techniques, issues in object recognition, case study of some vision systems. (S)

181C. Introduction to Robotics: Robot Control
(4) PADEN

Prerequisite: ECE 147A or ME 155A. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot control technology from open-loop manipulators and sensing systems, to single-joint servovalves and servomotors, to integrated adaptive force and position control using feedback from machine vision and touch sensing systems. Design emphasis on accurate tracking accomplished with minimal algorithm complexity. (S; may not be offered every year)

183. Nonlinear Phenomena
(4) MEZIC

Prerequisites: Physics 105A or ME 163A or 163B or upper-division standing in ECE.

Same course as Physics 106 and ME 163C. Lecture, 3 hours; discussion, 1 hour.

An introduction to nonlinear phenomena. Flows and bifurcations in one and two dimensions, chaos, fractals, strange attractors. Applications to physics, engineering, chemistry, and biology.

189A-B. Senior Computer Systems Project
(4-4) BUTNER

Prerequisite: consent of instructor. Senior standing in computer engineering, computer science, or ECE.

Not open for credit to students who have completed Computer Science 189.

Student groups design a significant computer-based project. Groups work independently with interaction among groups via interface specifications and informal meetings.

192. Projects in Electrical and Computer Engineering
(4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit with consent of instructor. Discussion, 2 hours; laboratory, 6 hours.

Projects in electrical and computer engineering for advanced undergraduate students. (F,W,S,SS)

193. Internship in Industry
(1-8) STAFF

Prerequisite: departmental approval.

Must have a 3.0 grade point average. Not more than 4 units may be used as departmental electives. May be repeated to 12 units. Field, 1-8 hours.

Special projects for selected students. Offered in conjunction with engineering practice in selected industrial and research firms, under direct faculty supervision. (F,W,S,SS)

194AA-ZZ. Group Studies in Electrical and Computer Engineering
(1-5) STAFF

Prerequisite: consent of instructor. Variable hours.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular departmental curriculum. Topics covered by these group studies are coded as follows (check with department for quarters offered):

A. Circuits
B. Systems Theory
C. Communications Systems
D. Control Systems
E. Signal Processing
F. Solid State
G. Fields and Waves
H. Quantum Electronics
I. Microwave Electronics
J. Switching Theory
K. Digital Systems Design
L. Computer Architecture
M. Computer Graphics
N. Pattern Recognition
O. Microprocessors and Microprocessor-based Systems
P. Simulation
Q. Imaging Systems and Image Processing
R. General
S. Speech
T. Robot Control
U. Optoelectronics
V. Scientific Computation
W. Computer Network
X. Distributed Computation
Y. Numerical Differential Equations

196. Undergraduate Research
(2-4) STAFF

Prerequisites: upper-division standing; consent of instructor.

Must have a minimum 3.0 grade-point average for the preceding three quarters. May be repeated for up to 12 units. Not more than 4 units may be applied to departmental electives.

Research opportunities for undergraduate students. Students will be expected to give regular oral presentations, actively participate in a weekly seminar, and prepare at least one written report on their research. (F,W,S)

199. Independent Studies in Electrical and Computer Engineering
(1-5) STAFF

Prerequisites: upper division standing; completion of two upper-division courses in electrical and computer engineering; consent of instructor.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to five units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. (F,W,S)

Directed individual study, normally experimental.

GRADUATE COURSES

201A. Electromagnetic Theory I
(4) YORK

Prerequisites: ECE 144A-B. Lecture, 4 hours.

Basic concepts in electromagnetic theory, energy power, plane waves, guided waves, dielectric metallic waveguides, radiation, uniqueness, image theory, reciprocity, duality, equivalence principle, induction theorem. (F)

201B. Electromagnetic Theory II
(4) YORK

Prerequisite: ECE 201A. Lecture, 4 hours.

Fundamental theorems and techniques for electromagnetic boundary value and radiation problems, Green's function, integrated equations, method of moments, mode matching, perturbational and variational analysis. (W; offered alternate years)

201C. Antennas
(3) YORK

Prerequisites: ECE 144A-B.

Offered in alternate years with ECE 201D. Lecture, 3 hours.

Classical and computer-numerical methods for analysis and design of antennas. Single-element antennas, antenna arrays and analysis of mutual-impedance effects, aperture antennas, and frequency independent antennas. (S)

201D. Microwave Circuits
(4) STAFF
Prerequisites: ECE 144A-B (144B may be taken concurrently).

Offered in alternate years with ECE 201C. Lecture, 3 hours; project, 1 hour.

Theory and design of microwave and mm-wave filters, directional couplers, and optimum, wideband impedance-matching structures as needed for coupling to solid-state (and other) devices. Includes experience with modern microwave CAD software. Some microstrip circuits are designed and tested. (S; offered alternate years)

202A. High-Frequency Transistor Circuits
(4) DAGLI
Prerequisite: ECE 137A. Lecture, 3 hours; design project, 1 hour.

Techniques for the design of transistor circuits at high frequencies. Topics include transistor high-frequency figures of merit, stability factors, the Linvill design technique, and the use of scattering parameters in amplifier design. (F)

202B. Microwave Solid-State Electronics
(4) DAGLI
Prerequisite: ECE 202A. Lecture, 3 hours; discussion, 1 hour.

Selected topics in microwave electronics such as parametric amplifiers, tunnel diode amplifiers, frequency multipliers, transferred electron devices, and IMPATT and TRAPATT devices. (W; offered alternate years)

205A. Information Theory
(4) ROSE
Prerequisites: ECE 140 or PSTAT 120A-B. Lecture, 4 hours.

Entropy, mutual information, and Shannon's coding theorems; lossless source coding, Huffman, Shannon-Fano-Elias, and arithmetic codes; channel capacity; rate-distortion theory, and lossy source coding; source-channel coding; algorithmic complexity and information; applications of information theory in various fields.

207. Research Projects or Independent Studies
(1-6) STAFF
Prerequisite: consent of instructor. Variable hours.

Graduate research projects or independent studies to be arranged between students and staff members. See M.S. degree requirements, plans 1 and 2, regarding number of units which may be used for M.S. degree. (F,W,S,SS)

208A. Fourier Optics
(4) YEH
Prerequisites: ECE 144A-B-C. Lecture, 4 hours.

Diffraction theory, lenses and Fourier transforms, imaging, spatial filtering, correlation, convolution, holography, volume holograms. (F)

208B. Statistical Optics
(4) YEH
Prerequisites: ECE 144A-B-C and 208A. Lecture, 4 hours.

Statistical properties of light, stochastic processes, spatial/temporal coherence, high-order coherence, interferometers, imaging with incoherent light, speckle, imaging through random media, noise and photon statistics. (W)

208C. Optical Computing and Information Displays
(4) YEH
Prerequisites: ECE 144A-B-C and 208A. Lecture, 4 hours.

Devices and media for optical computing, optical pattern recognition, spatial light modulators, optical storage, optical matrix algebra, associative memory, optical interconnection, optical neural networks and liquid crystal displays. (S)

210A. Matrix Analysis and Computation
(4) CHANDRASEKARAN
Prerequisite: consent of instructor.

Same course as Computer Science 211A, Mathematics 206A, ME 210A, and Chemical Engineering 211A.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language. Lecture, 4 hours.

Graduate level-matrix theory with introduction to matrix computations. SVD's, pseudoinverses, variational characterization of eigenvalues, perturbation theory, direct and iterative methods for matrix computations.

210B. Numerical Simulation
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211B, Mathematics 206B, ME 210B, and Chemical Engineering 211B.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language. Lecture, 4 hours.

Linear multistep methods and Runge-Kutta methods for ordinary differential equations: stability, order and convergence. Stiffness. Differential algebraic equations. Numerical solution of boundary value problems.

210C. Numerical Solution of Partial Differential Equations—Finite Difference Methods
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211C, Mathematics 206C, ME 210C, and Chemical Engineering 211C.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language. Lecture, 4 hours.

Finite difference methods for hyperbolic, parabolic and elliptic PDEs, with application to problems in science and engineering. Convergence, consistency, order and stability of finite difference methods. Dissipation and dispersion. Finite volume methods. Software design and adaptivity.

210D. Numerical Solution of Partial Differential Equations—Finite Element Methods
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211D, Mathematics 206D, ME 210D, and Chemical Engineering 211D.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language. Lecture, 4 hours.

Weighted residual and finite element methods for the solution of hyperbolic, parabolic and elliptical partial differential equations, with application to problems in science and engineering. Error estimates. Standard and discontinuous Galerkin methods.

211A. Engineering Quantum Mechanics I
(4) KROEMER
Prerequisites: ECE 105 and 162A-B.

Same course as Materials 211A. Lecture, 4 hours.

Wave-particle duality; bound states; uncertainty relations; expectation values and operators; variational principle; eigenfunction expansions; perturbation theory I. Treatment matches needs and background of ECE and materials students emphasizing solid state or quantum electronics. (W)

211B. Engineering Quantum Mechanics II
(4) KROEMER
Prerequisite: ECE 211A, 215A.

Same course as Materials 211B. Lecture, 4 hours.

Continuation of ECE 211A: symmetry and degeneracy; electrons in crystals, angular momentum; perturbation theory II; transition probabilities; quantized fields and radiative transitions; magnetic fields; electron spin; indistinguishable particles. (S)

213. Crystal Growth and Thin Film Epitaxy
(3) PETROFF
Prerequisite: consent of instructor.

Same course as Materials 213. Lecture, 3 hours.

Nucleation and epitaxy: homogeneous and heterogeneous epitaxy. Growth mechanism, defect creation. Kinetics and thermodynamics of crystal growth for: liquid phase epitaxy, vapor phase epitaxy, and molecular beam epitaxy of metals and semiconductors.

215A. Fundamentals of Electronic Solids I
(4) KROEMER
Prerequisite: ECE 162A or 162B.

Same course as Materials 206A. Lecture, 4 hours.

Introduction into the physics of semiconductors for beginning engineering graduate students. Crystal structure. Reciprocal lattice and crystal diffraction. Electrons in periodic structures. Energy and bands. Semiconductor electrons and probes, Fermi statistics. (F)

215B. Fundamentals of Electronic Solids II
(4) KROEMER
Prerequisite: ECE 162A or 162B.

Same course as Materials 206B. Lecture, 4 hours.

Phonons, electron scattering, electronic transport, selected optical properties, heterostructures, effective mass, quantum wells, two-dimensional electron gas, quantum wires, deep levels, crystal binding. (W)

216A. Defects in Materials
(3) PETROFF
Prerequisite: consent of instructor.

Same course as Materials 216A. Lecture, 3 hours.

The nature of point, line, and planar defects in crystalline solids. Dislocation basis for deformation behavior. Effect of different defects on electrical and optical properties of solids. Common defects in metals, semiconductors and ceramics. (F)

216B. Defects in Semiconductors
(3) PETROFF
Prerequisites: ECE 162A-B.

Same course as Materials 216B. Lecture, 3 hours.

Structural and electronic properties of elementary defects in semiconductors. Point defects and impurity complexes. Deep levels. Dislocations and grain boundary electronic properties. Measurement techniques for radiative and non-radiative defect centers. (W)

217. Molecular Beam Epitaxy and Band Gap Engineering
(3) GOSSARD
Prerequisites: ECE 162A-B and 213.

Same course as Materials 217. Lecture, 3 hours.

Fundamentals and recent research developments in the growth and properties of thin crystalline films of electronic and optical materials by the process of molecular beam epitaxy. Artificially structured materials with quantized electron confinement and artificially engineered electronic band structure properties.

218A. Communication Electronics
(4) LONG
Prerequisites: ECE 137A and 137B.

Analog communication circuits 1 MHz to 1 GHz with emphasis on receivers. System level analysis, noise, and distortion. Design and evaluation of components; amplifiers, mixers, oscillators, frequency synthesis, PLL.

218B. Communication Electronics
(4) LONG
Prerequisite: ECE 145A; ECE majors only.

Analog and digital communication circuits 1 MHz to 1 GHz with emphasis on receivers. Low noise design. S-parameter design techniques. Demodulators. AGC circuits.

220A. Semiconductor Device Processing
(4) HU
Prerequisites: ECE 124B-C.

Same course as Materials 215A. Lecture, 3 hours; discussion, 1 hour.

Intensive theoretical and laboratory instruction in solid-state device and integrated circuit fabrication. Topics include (1) semiconductor material properties and characterization; (2) phase diagrams; (3) diffusion; (4) thermal oxidation; (5) vacuum processes; (6) thin-film deposition; (7) scanning electron microscopy. Both gallium arsenide and silicon technologies are presented. (F)

220B-C. Semiconductor Device Processing
(4-4) HU

Prerequisite: ECE 220A.

Same course as Materials 215B-C. Lecture, 3 hours; discussion 1 hour.

Continued theoretical and laboratory instruction in the fundamentals, the design, the fabrication, and the characterization of junction and field-effect devices. Topics will include bipolar characterization, design, fabrication, and testing. The laboratory effort initiated in ECE 220A will be continued in these two quarters. (W,S)

221A. Semiconductor Device Physics I
(4) MISHRA

Prerequisites: ECE 105 and 162A-B. Lecture, 4 hours.

Band diagrams of p-n junctions and heterojunctions; current flow by drift and diffusion; bipolar transistors; recombination and generation. Schottky barriers; heterostructures. (W; offered alternate years)

221B. Semiconductor Device Physics II
(4) MISHRA

Prerequisites: ECE 215 and ECE 221A. Lecture, 4 hours.

More advanced continuation of ECE 221A: field effect transistors, quantum wells and superlattices; tunneling; avalanche breakdown; physical limitations of bipolar and field effect transistors; two-dimensional current flow problems. (S; offered alternate years)

224A. VLSI Project Design
(4) BUTNER

Prerequisites: ECE 152A and 154. Lecture, 4 hours.

Organization, planning, circuit design, mask layout, simulation, and analysis of Very Large-Scale Integrated circuits (VLSI circuits). Application of computer-aided design tools and techniques. Design of a substantial NMOS or CMOS VLSI project. (F)

224B. VLSI Project Testing
(4) BUTNER

Prerequisite: ECE 224A. Lecture, 2 hours; laboratory, 2 hours.

Test equipment and testing techniques. Methods for diagnosing design problems. Students perform laboratory testing of their fabricated designs from ECE 224A. (S)

225. High Speed Digital Integrated Circuit Design
(4) LONG

Prerequisite: ECE 124 or 137A. Lecture, 4 hours.

Very high speed digital IC technologies and circuits. Silicon and compound semiconductor devices. Interfaces, interconnections, packaging, testing of high speed circuits. Low power, high speed design technologies. Application of CAD tools for design project. (S)

227A. Semiconductor Lasers I
(4) COLDREN

Prerequisites: ECE 162A-B-C or 144A-B. Lecture, 4 hours.

Review of semiconductor physics, growth technology, and materials properties; double-heterostructure and quantum-well laser structures; carrier and photon rate equations; light vs. current characteristics; scattering and transmission matrices; compound cavity, distributed Bragg reflector, and distributed feedback lasers. (F)

227B. Semiconductor Lasers II
(4) COLDREN

Prerquisites: ECE 227A and 215A. Lecture, 4 hours.

Gain and spontaneous emission vs. injection current in semiconductors; nonradiative recombination; strained-layer quantum wells. Dynamic characteristics of lasers including differential and large signal analysis of the rate equations; relative intensity noise and linewidth; carrier transport and feedback effects. (W)

227C. Photonic Integrated Circuits
(4) COLDREN

Prerequisites: ECE 227A-B. Lecture, 4 hours.

Perturbation and coupled-mode analysis; DFB lasers revisited; directional couplers; modal excitation. Dielectric waveguide analysis techniques; waveguide radiation losses. Photonic integrated circuit examples, including tunable lasers with in-line gratings and contra- and co-directional couplers; ring lasers; numerical analysis techniques. (S)

228A. Fiber Optic Communications
(4) BOWERS

Prerequisites: ECE 162A-B-C or 144A-B. Lecture, 4 hours.

Optical fiber structures and guided modes. Effect of dispersion, attenuation, self phase modulation, Brillioun and Raman gain. Loss and rise time budgets. Optical amplifiers, photodetector design, and receiver characteristics. (F)

228B. Optical Communication Switching and Networks
(4) BOWERS

Prerequisite: ECE 228A. Lecture, 4 hours.

Long distance terrestrial and submarine communications. Time division multiplexing protocols and architectures. Wavelength division multiplexed devices, systems and protocols. Coherent communication systems. Passive optical networks. Blocking and nonblocking optical switches. Network design and management. (W)

230A-B. Linear Systems I, II
(4-4) DAHLEH

Prerequisites: ECE 210A for 230A. ECE 140, 210A, and 230A for 230B. Lecture, 4 hours.

Internal and external descriptions. Solution of state equations. Controllability and observability realizations. Pole assignment, observers; modern compensator design. Disturbance localizations and decoupling. Least-squares control. Least-squares estimation; Kalman filters; smoothing. The separation theorem; LQG compensator design. Computational considerations. Selected additional topics. (W,S)

231A. Numerical System Theory
(4) STAFF

Prerequisite: ECE 210A. Lecture, 3 hours.

Numerical linear algebra in finite floating-point arithmetic; linear equations; least squares; singular value decomposition; (generalized) eigenvalue/eigenvector problems; algorithm implementations in mathematical software; parallel algorithms and other considerations for concurrent computing environments. (W)

231B. Numerical System Applications
(4) STAFF

Prerequisite: ECE 231A. Lecture, 3 hours.

Numerical issues in multivariable control and estimation; efficient evaluation of frequency response; numerical computation of the matrix exponential and other matrix-valued functions; condition estimation; numerical solution of Lyapunov, Sylvester, and Riccati equations. (S)

232A. Introductory Robust Control with Applications
(4) SMITH, DAHLEH

Prerequisites: ECE 130 or ECE 230A or Mechanical Engineering 255A; and ECE 230B (may be taken concurrently).

Same course as Mechanical Engineering 256A.

Robust control theory; uncertainty modeling; stability of systems in the presence of norm-bounded perturbations; induced norm performance problems; structured singular value analysis; H-infinity control theory; model reduction; computer simulation based design project involving practical problems.

232B. Robust Control Theory
(4) DAHLEH, SMITH

Prerequisite: ECE 232A or Mechanical Engineering 256A.

Same course as ME 256B. Lecture, 4 hours.

Formulation of H-infinity, H_2 and 1_1 optimal control problems. Hankel singular values. Parametrization of achievable closed-loop maps. Linear time-invariant, linear time-varying, and nonlinear time-varying perturbation analysis. Model matching in 1_1 with duality theory. H-infinity model matching.

233. Numerical Simulation
(4) STAFF

Lecture, 4 hours.

Interpolation and orthogonal polynomials, numerical differentiation and integration, existence and uniqueness of solutions to ODEs, Runge-Kutta and Adams methods, stability and stiff multistep methods, Pade approximations to the matrix exponential, numerical methods for Schrodinger's equation and boundary value problems.

235. Stochastic Processes in Engineering
(4) ILTIS

Prerequisites: ECE 140; graduate standing. Lecture, 4 hours.

A first-year graduate course in stochastic processes, including: review of basic probability; Gaussian, Poisson, and Wiener processes; wide-sense stationary processes; covariance function and power spectral density; linear systems driven by random inputs; basic Wiener and Kalman filter theory. (W)

236. Nonlinear Control Systems
(4) PADEN, KOKOTOVIC

Recommended preparation: ECE 230A.

Same course as Mechanical Engineering 236. Lecture, 4 hours.

Analysis and design of nonlinear control systems. Focus on Lyapunov stability theory, with sufficient time devoted to contrasts between linear and nonlinear systems, input-output stability and the describing function method.

237. Nonlinear Control Design
(4) KOKOTOVIC

Prerequisite: ECE 236 or Mechanical Engineering 236.

Same course as Mechanical Engineering 237. Lecture, 4 hours.

Stabilizability by linearization and by geometric methods. State feedback design and input/output linearization. Observability and output feedback design. Singular perturbations and composite control. Backstepping design of robust controllers for systems with uncertain nonlinearities. Adaptive nonlinear control. (S)

238. Advanced Control Design Laboratory
(4) SMITH

Prerequisites: ECE 230A; and, ECE 232A or ECE 237 or ME 237 or ECE 249 or ME 270A or Chemical Engineering 252. Lecture, 2 hours; laboratory, 6 hours.

A laboratory course requiring students to design and implement advanced control systems on a physical experiment. Experiments from any engineering or scientific discipline are chosen by the student.

240A. Optimal Estimation and Filtering
(4) SHYNK

Prerequisites: ECE 140 and 210A. Lecture, 4 hours.

Optimal estimation concepts and theory (minimum variance, least-squares, and maximum likelihood estimation), optimal recursive algorithms for discrete- and continuous-time filtering of noisy signals and data. Wiener and Kalman filters, stability of recursive optimal filtering algorithms, modeling errors in recursive filters. (W)

240B. Detection Theory
(4) ILTIS

Prerequisite: ECE 210A or 235. Lecture, 4 hours.

Hypothesis testing and its applications to the formulation of decision rules for the "optimal" detection of signals in a noisy environment. Selection of optimality criteria, the derivation of optimum receivers, applications in radar and digital communications. (S)

242. Digital Signal Compression
(4) STAFF

Prerequisites: ECE 140 or 235; and ECE 146B. Lecture, 3 hours.

Principles and techniques of signal compression systems. Basic quantization theory, linear prediction, predictive coding, transform and subband coding, entropy coding, and vector quantization. Techniques and algorithms for efficient trade-offs between fidelity, bit-rate, and complexity. Applications to speech, audio, image and video compression. (F)

243. Digital Communication Theory
(4) SHYNK

Prerequisite: ECE 146B. Lecture, 4 hours.

Review of probability and random waveforms, optimum receiver principles, efficient signaling, bounds on error probability, channel capacity, emphasis on geometric approach to signal description. (S)

244. Topics in Signal Compression
(4) STAFF

Prerequisite: ECE 242. Lecture, 4 hours.

Theory and applications of low rate signal coding. Topics may include asymptotic quantization and distortion-rate theory, adaptive, finite-state, and constrained vector quantization. Multichannel prediction, tree/trellis coding, variable-rate methods, and applications from audio and visual signal compression. (W)

245. Adaptive Filter Theory
(4) SHYNK

Prerequisites: ECE 140, 158, and 210A (may be taken concurrently). Lecture, 4 hours.

Theory and analysis of adaptive filters. Optimal filtering, linear prediction, method of least squares. Steepest-descent and Newton search methods, gradient estimation, LMS adaptive algorithm, recursive least squares. Gradient and least-squares lattice algorithms for joint-process estimation. Convergence analysis, stability conditions, time constants, misadjustment. (F; offered in alternate years.)

246. Data Networks
(4) VARVARIGOS

Prerequisite: ECE 140. Lecture, 4 hours.

Layered network architectures. Point to point protocols. Queueing theory for data networks. Multiaccess communications; switch design. Routing in data networks. Flow control.

247. System Identification
(4) KOKOTOVIC

Prerequisite: ECE 230A. Lecture, 4 hours.

On-line identification of continuous- and discrete-time systems. Linear parameterizations. Continuous gradient and least squares algorithms. Stability, persistent excitation and parameter convergence. Robust algorithms for imperfect models. Averaging. Discrete-time equation-error identifiers. Output-error methods.

248. Kalman and Adaptive Filtering
(4) STAFF

Prerequisites: ECE 210A, 230A and 235 (may be taken concurrently). Lecture, 4 hours.

Least-squares estimation for processes with state-space models. Wiener filters and spectral factorization. Kalman filters, smoothing and square-root algorithms. Steady-state filters. Extended Kalman filters for non-linear models. Fixed-order and order-recursive adaptive filters. (F)

249. Adaptive Control Systems
(4) KOKOTOVIC

Prerequisites: ECE 236 and 247. Lecture, 4 hours.

Models of plants with unknown parameters. Boundedness properties of parameter update laws. Adaptive linear control. Stability and robustness to modeling errors and disturbances. Backstepping state-feedback design of direct adaptive nonlinear control. Output-feedback design. Nonlinear swapping. Indirect adaptive nonlinear control. (F)

252A. Sequential Machines and Automata Theory
(4) CHENG

Prerequisite: ECE 152A. Lecture, 4 hours.

Structure of sequential machines, covers, partitions, decomposition, and synthesis of multiple machines. State identification and fault detection experiments. Petri nets. Stochastic systems. Memory characteristics of finite automata. Linear sequential machines. Finite automata and regular languages. Retiming. (F)

252B. Computer Arithmetic
(4) PARHAMI

Prerequisites: ECE 152A-B. Lecture, 4 hours.

Standard and unconventional number representations. Design of fast two-operand and multi-operand adders. High-speed multiplication and division algorithms. Floating-point numbers, algorithms, and errors. Hardware algorithms for function evaluation. Pipelined, digit-serial, and fault-tolerant arithmetic processors. (F)

252C. Advanced Topics in Digital System Design
(4) PARHAMI

Prerequisites: ECE 152A-B. Lecture, 4 hours.

Pipelining: design issues, performance, tradeoffs. Bit-serial, digit-serial, and on-line arithmetic. VLSI array processors: systolic/wavefront arrays. Reconfigurable and robust digital systems. Microprogramming: techniques, optimization. Control-driven versus data-driven design styles. Example dedicated digital systems. (W)

254A. Advanced Computer Architecture: Supercomputers
(4) MELLIAR-SMITH

Prerequisite: ECE 154. Lecture, 4 hours.

Design and application aspects of high-performance uniprocessors and shared memory multiprocessors. Memory design issues: cache memories, address translation, interleaving. Processor design issues: instruction sets, pipelining, vector processing. Software issues: explicit/implicit vectorization, vector-processing languages, optimizing compilers. Case studies of designs and applications. (W)

254B. Advanced Computer Architecture: Parallel Processing
(4) PARHAMI

Prerequisite: ECE 254A. Lecture, 4 hours.

The nature of concurrent computations. Idealized models of parallel systems. Practical realization of concurrency. Interconnection networks. Building-block parallel algorithms. Algorithm design, optimality, and efficiency. Mapping and scheduling of computations. Example multiprocessors and multicomputers. (S)

254C. Advanced Computer Architecture: Distributed Systems
(4) MELLIAR-SMITH

Prerequisite: ECE 254A.

Multicomputers and distributed architectures. Message-based asynchronous computations. Distributed algorithms and their performance. Hardware issues: nodes, links, and communication mechanisms. Control issues: synchronization, global state determination, distributed consensus, and fault tolerance. Software issues: operating systems and languages. (F)

255. VLSI Testing Techniques
(4) CHENG

Prerequisites: ECE 152A, knowledge of C language, data structures and algorithms. Lecture, 4 hours.

Concepts, algorithms and design techniques for VLSI testing. Fault modeling, fault simulation, automatic test generation, design for testability, built-in self test, testability analysis, delay testing and synthesis for testability. (S)

256A. Introduction to Design Automation
(4) MAREK-SADOWSKA

Prerequisites: ECE 124A or ECE 224A; knowledge of C language; Algorithms and Data Structures, equivalent to Computer Science 130A-B. Lecture, 3 hours; laboratory, 2 hours.

Overview of physical level design automation. Partitioning, placement, routing and structured design of VLSI and PC-board structures. Techniques will include graph theoretic algorithms, integer linear programming, force-directed and simulated annealing neuristics. (F)

256B. Logic Design Automation
(4) BREWER

Prerequisite: ECE 256A. Lecture, 3 hours; laboratory, 2 hours.

CAD algorithms for VLSI logic and module level design. Special attention paid to timing, area, and power trade-offs. Cell design systems and associated lab with state of the art VLSI design tools. (W)

256C. Advanced VLSI Architecture and Design
(4) BREWER

Prerequisites: ECE 224A or 256A or 256B or ECE 124A; and consent of instructor.

Large Scale VLSI design with attention to performance constraints in real-world designs. Topics include: circuit modeling, communication parasitics, architecture optimization, and packaging. Large scale project will be fabricated using silicon compilation tools. (S)

256D. Algorithmic Logic Synthesis
(4) MAREK-SADOWSKA

Prerequisite: ECE 256A. Lecture, 4 hours.

Companion course for ECE 256B. Algorithmic extension of logic synthesis and techniques. Topics covered include: two and multilevel minimization, technology mapping, logic partitioning, and testable logic. (W)

257A. Fault-Tolerant Computing
(4) STAFF

Prerequisites: ECE 152A-B. Lecture, 3 hours, plus individual project.

Fundamental concepts of dependable computing. Logical fault models. Dependability modeling and evaluation. Fault-tolerance building blocks, e.g., dynamic and standby redundancy, information coding. A paradigm for designing fault-tolerant systems. Introduction to fault-tolerant software and systems. (F)

257B. Dependable Systems
(4) STAFF

Prerequisite: ECE 257A. Lecture, 3 hours, plus individual project.

Achieving dependable software through fault tolerance. Design diversity concepts, experience, and experiments. Dependable systems design paradigm. Categories of fault-tolerant systems: long-life systems, real-time systems, and high-availability systems. Case studies. (W)

258A. Advanced Digital Signal Processing
(4) MITRA

Prerequisite: ECE 158. Lecture, 4 hours.

Digital filter design, discrete random signals, effects of finite word length arithmetic, fast Fourier transform and applications, power spectrum estimation. (W)

258B. Multirate Digital Signal Processing
(4) MITRA

Prerequisites: ECE 158 and ECE 258A. Lecture, 4 hours.

Multirate digital filter theory, polyphase decomposition, decimator and interpolar design, efficient implementations, orthogonal transforms, wavelet transform, analysis and synthesis filter banks, quadrature mirror filter banks, transmultiplexer, subhand decomposition, applications. (S)

259. Digital Speech Processing
(4) STAFF

Prerequisite: ECE 158 or 242. Lecture, 4 hours.

Speech sounds, acoustic phonetics, speech production and perception. Digital filter modeling of the vocal tract as a lossless tube. Short-time characteristics of speech in the time and frequency domains. Waveform and linear predictive coding of speech. Speech synthesis and recognition. (S)

260A. Principles of Quantum Electronics
(4) IMAMOGLU

Prerequisite: ECE 144A or 162C. Lecture, 4 hours.

Energy levels in atoms, ions, and molecules. Interaction between radiation and quantized systems. Stimulated emission devices. Optical resonators. Lasers. (F; offered alternate years)

260B. Nonlinear and Quantum Optics
(4) IMAMOGLU

Prerequisite: ECE 260A and 211A. Lecture, 4 hours.

Nonlinear susceptibilities; generation of electromagnetic radiation; harmonic generation and parametric amplification. Quantization of the radiation field; quantum noise and squeezed states of light; quantum measurements. (W; offered alternate years)

270A-B-C. Physiological Basis of Biomedical Engineering
(3-3-3) STAFF

Prerequisite: undergraduate course in control systems. Lecture, 3 hours.

Provides an intensive presentation of the physiology of a single-organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are cardiovascular, respiratory, renal, endocrine, metabolism, and transport systems. (F,W,S; may not be offered every year)

271A. Principles of Optimization
(4) VARVARIGOS

Prerequisite: ECE 210A (may be taken concurrently). Lecture, 4 hours.

Linear programming: simplex and revised simplex method, duality theory, primal-dual algorithms, Karmarkar's algorithm. Network flow problems: max-flow/min-cut theorem, Ford-Fulkerson algorithm, shortest path algorithms. Complexity and NP-completeness theory: the classes of P and NP, reductions between NP-complete problems, pseudopolynomial and approximation algorithms. (F)

271B. Numerical Optimization Methods
(4) STAFF

Prerequisite: ECE 210A. Lecture, 4 hours.

Unconstrained nonlinear problems: basic properties of solutions and algorithms, global convergence, convergence rate, and complexity considerations. Constrained nonlinear problems: basic properties of solutions and algorithms. Primal, penalty and barrier, cutting plane, and dual methods. Computer implementations. (W)

271C. Dynamic Optimization
(4) RHODES

Prerequisite: ECE 210A or 271B. Lecture, 4 hours.

Linear functionals, adjoint operators and duality. Gateaux and Frechet derivatives of nonlinear functionals and optimality conditions. Calculus of variations and Pontryagin's principle. Solution of optimal control problems by iterative methods in function spaces. Min-max problems and differential games.

277A. Neural Networks Theory
(4) ROSE

Prerequisites: ECE 130C and 140. Lecture, 4 hours.

Discrete and continuous feedback (Hopfield) models. Feedforward models. Capacity bounds and estimates. Supervised learning: perceptrons, back-propagation, Boltzmann machine. Unsupervised learning: self-organization and hierarchical clustering by stochastic and deterministic methods. Generalizing from examples and the Vapnik-Chervonenkis dimension. (F)

277B. Pattern Recognition
(4) ROSE

Prerequisites: ECE 130C and 140. Lecture, 4 hours.

Principles and design of pattern recognition systems. Statistical classifiers: discriminant functions; Bayes, minimum-risk, k-nearest neighbors, perceptrons. Clustering and estimation; criteria; k-means, fuzzy, hierarchical, graph-theoretic, simulated and deterministic annealing; maximum likelihood and Bayesian methods; nonparametric methods. Overview of applications. (W)

278A. Digital Image Processing
(4) MITRA, MANJUNATH

Prerequisite: ECE 158 or ECE 178. Lecture, 3 hours; laboratory, 3 hours.

Two-dimensional signals and systems. Two-dimensional Fourier and z-transforms. Discrete Fourier transform, two-dimensional digital filters. Image processing basics, image enhancement and restoration. Special image processing software available for laboratory experimentation. (S)

278B. Selected Topics in Image Processing
(4) MANJUNATH

Prerequisite: ECE 278A. Lecture, 4 hours.

An advanced course in DIP: topics to be covered include edge detection, random fields and application to image analysis including textures, image reconstruction. (may not be offered every year)

278C. Imaging Systems
(4) LEE

Prerequisites: ECE 158 and 178. Lecture, 4 hours.

Generalized holography, backward techniques, resolution limit, X-ray tomography, diffraction tomography, NMR imaging, synthetic-aperture radar, active sonar imaging, acoustic microscopy, imaging algorithms, motion estimation and tracking. (S)

279A. Computer System Performance Evaluation
(4) MOSER

Prerequisites: ECE 140, 154, and Computer Science 170. Lecture, 4 hours.

Overview of the evaluation of computer system performance. Measurement, simulation and analytic techniques for performance analysis. System work load characterization. Examples of performance evaluation for system selection, tuning, and design. Evaluation of program performance. (F)

279B. Queuing Theory and Applications
(4) MOSER

Prerequisite: ECE 140. Lecture, 4 hours.

Discrete- and continuous-time Markov chains, birth-death processes, birth-death queuing systems in equilibrium, Markovian queues in equilibrium, results from M/G/1, G/M/1 queues. (S)

281A. Robot Motion
(4) STAFF

Prerequisites: ECE 181A-B-C. Lecture, 4 hours.

Advanced course on the mathematics, dynamics, and control of robot systems. Homogeneous transformations, kinematic and dynamic equations and their solutions, motion trajectories, static forces, compliance, programming, position, and force control. (W; may not be offered every year)

281B. Advanced Topics in Computer Vision
(4) MANJUNATH

Prerequisite: ECE 181B. Lecture, 3 hours.

Same course as Computer Science 281B.

Advanced topics in computer vision: image sequence analysis, spatiotemporal filtering, camera calibration and hand-eye coordination, robot navigation, shape representation, physically-based modeling, multi-sensory fusion, biological models, expert vision systems, and other topics selected from recent research papers. (F; offered alternate years)

282. Error Correcting Codes
(4) ROSE

Prerequisite: ECE 130C or 140. Lecture, 3 hours.

Principles and techniques for combating channel errors in data transmission or storage. Introduction to Galois fields. Linear block codes (particularly Hamming, BCH, Reed-Solomon). Convolution codes. Encoding and decoding algorithms (including spectral methods, maximum likelihood and Viterbi decoding.)

293. Internship in Industry
(1-6) STAFF

Prerequisite: prior departmental approval required. May be repeated to a maximum of 6 units. Variable hours.

Special projects for selected students. Offered in conjunction with engineering practice in selected industrial and research firms, under direct faculty supervision. (F,W,S,SS)

501. Techniques of Engineering Teaching
(2) STAFF

Prerequisite: consent of graduate advisor. This course is required for new teaching assistants, and may be taken only once.

No unit credit allowed toward advanced degree. S/U grading only. Field, 4 hours.

An initial 1-2 day workshop on teaching techniques, followed by practical experience in teaching, videotaping, and meetings with instructional consultation staff to improve techniques. (F)

502. Teaching of Electrical and Computer Engineering
(1-4) STAFF

Prerequisite: ECE 501 (may be taken concurrently).

No unit credit allowed toward advanced degree. Variable hours.

Procedures and techniques for teaching electrical engineering or computer engineering gained through actual teaching of lecture courses, leading discussion sections, and/or teaching engineering laboratories. Meetings will be held as needed to discuss problems, methods, and procedures. (F,W,S)

594AA-ZZ. Special Topics in Electrical and Computer Engineering
(1-5) STAFF

Prerequisites: consent of instructor and graduate status.

May be repeated for credit if there is no duplication of course content. Seminar, 1-5 hours.

Instruction in these courses may be carried out by lecture, or by laboratory, or by a combination of these. These courses provide a study of topics of current interest in various areas of electrical and computer engineering. Special topics are coded as follows (check with department for quarters offered):

A. Circuits
B. Systems Theory
C. Communication Systems
D. Control Systems
E. Signal Processing
F. Solid State
G. Fields and Waves
H. Quantum Electronics
I. Microwave Electronics
J. Switching Theory
K. Digital Systems Design
L. Computer Architecture
M. Computer Graphics
N. Pattern Recognition
O. Microprocessors and Microprocessor-based Systems
P. Simulation
Q. Imaging Systems and Image Processing
R. General
S. Speech
T. Robot Control
U. Optoelectronics
V. Scientific Computation
W. Computer Network
X. Distributed Computation
Y. Numerical Differential Equations

595AA-ZZ. Group Studies in Electrical and Computer Engineering
(1) STAFF

Prerequisite: consent of instructor.

No unit credit allowed toward degree. May be repeated for enrollment credit if there is no duplication of course content. Seminar, 1 hour.

Instruction in research group meetings carried out by lecture, by laboratory, or by a combination of the two. Courses provide a critical review of research in various areas of electrical and computer engineering. (F,W,S)

596. Directed Research
(2-12) STAFF

Research, either experimental or theoretical, May be undertaken by properly qualified graduate students under the direction of a faculty member. (F,W,S,SS)

597. Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per exam.

Individual studies for M.S. comprehensive examinations and Ph.D. examinations. Maximum of 12 units per quarter. S/U grading. Instructor is normally student's major professor or chair of doctoral committee. (F,W,S,SS)

598. Master's Thesis Research and Preparation
(1-12) STAFF

Prerequisite: consent of graduate advisor.

For research underlying the thesis and writing of the thesis. (F,W,S,SS)

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF
Prerequisite: consent of chair of student's doctoral committee.
Research and preparation of dissertation. (F,W,S,SS)

Engineering Sciences Courses

Engineering Sciences, Office of the Associate Dean for Academic Affairs, Engineering I, Room 1004; Telephone (805) 893-3207 or 893-2809

LOWER DIVISION

Note: Students will not receive credit toward graduation even as a free elective if they repeat what is essentially the same subject in different courses. An example of such a redundancy is Engineering 1A-B-C and Engineering 3.

2. Introduction to Programming Concepts
(3) STAFF
Intended for students with little or no background in computing.
Elements of computing systems, programming tools, such as editors and compilers, system commands, and an overview of programming techniques. Use of the UNIX operating system and the C programming language will provide a basic framework. (F)

3. Introduction to C Programming
(3) STAFF
Prerequisites: open to College of Engineering freshmen only, except computer science and pre-computer science majors.
Introduction to C programming language. Considers algorithms, data structures, debugging, and program design. (F,S)

5A. Computations in Elementary Differential Equations and Linear Algebra
(1) STAFF
Prerequisites: Physics 1; Mathematics 5A (may be taken concurrently); open to College of Engineering majors only.
Ordinary differential equations, initial value problems, and linear algebra explored in an engineering context with the use of modern computer math tools. (F)

5B. Computations in Vector Calculus
(1) STAFF
Prerequisites: Physics 1; Mathematics 5B (may be taken concurrently); open to College of Engineering majors only.
Vector differential calculus and vector integral calculus explored in an engineering context with the use of modern computer math tools. (W)

5C. Computations in Ordinary and Partial Differential Equations
(1) STAFF
Prerequisites: Physics 1; Mathematics 5C (may be taken concurrently); open to College of Engineering majors only.
Nonlinear systems, Fourier analysis, boundary value problems, and partial differential equations explored in an engineering context with the use of modern math tools. (S)

UPPER DIVISION

100. Engineering Economic Analysis
(3) STAFF
Prerequisite: upper-division standing in engineering.
Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,W)

101. Ethics in Engineering
(3) STAFF
Prerequisite: upper-division standing in engineering.
The nature of moral value, normative judgment, and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W,S)

103. Advanced Engineering Writing
(4) STAFF
Prerequisites: Engineering 2A-B-C or Writing 1 or 1E or 2 or 2E; and, Writing 50 or 50E; upper-division standing.
Practice in the forms of communication—contractual reports, proposals, conference papers, oral presentations, business plans—that engineers and entrepreneurial engineers will encounter in professional careers. Focus is on research methods, developing a clear and persuasive writing style, and electronic document preparation.

180. Entrepreneurial Engineering
(4) BOWERS
Prerequisites: Engineering 2A-B-C, or Writing 2 and 50; upper-division standing in engineering.
Covers requirements for a successful startup company. Topics include forming a company, preparing a business plan, patents, sustaining competitive advantage, attracting venture capital, dilution, evaluation, and initial public offering. Students present business, marketing, and financial plans to financiers and entrepreneurs. (S)

GRADUATE COURSES

203. Graduate Research Writing
(3) STAFF
Prerequisite: graduate standing in the College of Engineering.
Analysis and practice of the forms of postgraduate writing. Documents studied include dissertations, dissertation proposals and defense, professional papers, oral presentations, abstracts, and project research reports. Peer review process is analyzed. Written and oral assignments in discussion/workshop format.

210. Marketing
(4) LUCAS
An introductory course on marketing theory and practice. Includes: customer, company, and competitor analysis, product and brand management, distribution, pricing, and advertising. Case studies will be examined.

Materials

Department of Materials Engineering II, Room 1355; Telephone (805) 893-4362
Web site: www.materials.ucsb.edu
Chair: Frederick F. Lange
Associate Chair: Carlos G. Levi

Faculty

*** **Guillermo C. Bazan**, Ph.D., Massachusetts Institute of Technology, Professor (polymer synthesis, photophysics)

*** **Anthony K. Cheetham**, Ph.D., Oxford University, Professor, Director of Materials Research Laboratory (catalysis, optical materials, X-ray, neutron diffraction)

David R. Clarke, Ph.D., University of Cambridge, Professor (electrical ceramics, thermal barrier coatings, piezospectroscopy, mechanics of microelectronics)

§ **Larry A. Coldren**, Ph.D., Stanford University, Professor, Director of Optoelectronics Technology Center (semiconductor integrated optics, optoelectronics, molecular beam epitaxy, microfabrication)

*** **Timothy Deming**, Ph.D., UC Berkeley, Associate Professor (synthetic chemistry, polymerization catalysis, biopolymer synthesis, biocompatible materials)

§ **Steven P. DenBaars**, Ph.D., University of Southern California, Professor (metalorganic chemical vapor deposition (MOCVD) of semiconductors, IR to blue lasers and LEDs, high power electronic materials and devices)

§ **Arthur C. Gossard**, Ph.D., UC Berkeley, Professor (epitaxial growth, artificially synthesized semiconductor microstructures, semiconductor devices)

** **Alan J. Heeger**, Ph.D., UC Berkeley, Professor, Director of Institute for Polymers and Organic Solids (condensed-matter physics, conducting polymers)

Nicola A. Hill, Ph.D., UC Berkeley, Assistant Professor (computational electronic and magnetic materials)

§ **Evelyn Hu**, Ph.D., Columbia University, Professor, Director of Center for Quantized Electronic Structures, Director of National Nanofabrication Users Network (high-resolution fabrication techniques for semiconductor device structures, process-related materials damage, contact/interface studies, superconductivity)

* **Jacob N. Israelachvili**, Ph.D., University of Cambridge, Professor (adhesion, friction surface forces, colloids, biosurface interactions)

* **Edward J. Kramer**, Ph.D., Carnegie Mellon University, Professor (microscopic fundamentals of fracture polymers, diffusion in polymers, and polymer surfaces and interfaces, thin films)

§ **Herbert Kroemer**, Dr. Rer. Nat., University of Göttingen, Professor (device physics, molecular beam epitaxy, heterojunctions, compound semiconductors)

Frederick F. Lange, Ph.D., Pennsylvania State University, Professor (processing, ceramics, microstructure, mechanical properties)

** **James S. Langer**, Ph.D., University of Birmingham, England, Professor (kinetics of phase transformations, solidification patterns, fracture dynamics)

* **L. Gary Leal**, Ph.D., Stanford University, Professor (fluid mechanics, physics of complex fluids, rheology)

§§ **Carlos G. Levi**, Ph.D., University of Illinois at Urbana-Champaign, Professor (materials processing, coatings, composites, solidification, metastable structures)

§§ **Noel C. MacDonald**, Ph.D., UC Berkeley, Professor (microelectromechanical systems, applied physics, nano-fabrication, electron optics, materials, mechanics, surface analysis)

§§ **Robert M. McMeeking**, Ph.D., Brown University, Professor (mechanics of materials, fracture mechanics, plasticity, computational mechanics, process modeling)

§§ **Frederick F. Milstein**, Ph.D., UC Los Angeles, Professor (crystal mechanics, bonding, defects, mechanical properties)

Shuji Nakamura, Ph.D., University of Tokushima, Professor (gallium nitride, blue lasers, white LEDs, solid state illumination, bulk GaN substrates)

§§ **G. Robert Odette**, Ph.D., Massachusetts Institute of Technology, Professor (fundamental deformation and fracture mechanisms, micromechanics microstructural evolution, aging and property, degradation in aggressive environments, structural reliability, advanced high-performance composites)

§ **Pierre M. Petroff**, Ph.D., UC Berkeley, Professor (semiconductor interfaces, defects physics, self assembled quantum structures, quantum dots and nanomagnets)

** **Philip A. Pincus**, Ph.D., UC Berkeley, Professor (polymers, colloids, surfactants, membranes, biomaterials)

* **David J. Pine**, Ph.D., Cornell University, Professor (rheology, light scattering, polymers, colloids, complex fluids, macroporous materials, photonic materials)

Cyrus R. Safinya, Ph.D., Massachusetts Institute of Technology, Professor (structures of self assembled biomolecular materials)

James S. Speck, Sc.D., Massachusetts Institute of Technology, Professor (transmission electron microscopy, x-ray diffraction, thin films, materials science, semiconductors, ferroelectrics)

*** **Galen Stucky**, Ph.D., Iowa State University, Professor (biomaterials, surfactants, composites, materials synthesis, porous materials)

* **Matthew V. Tirrell**, Ph.D., University of Massachusetts, Professor (bioengineering, polymer science and engineering)

Francis W. Zok, Ph.D., McMaster University, Professor (mechanical and thermal properties of composite materials)

Emeriti Faculty

§§ Anthony G. Evans, Ph.D., Imperial College, London, Professor Emeritus (fundamental research on mechanical properties and fabrication of brittle materials, including fracture, deformation, creep, fatigue, erosion, wear, NDE, sintering, and impact damage)

§ **James L. Merz**, Ph.D., Harvard University, Professor Emeritus

§ Joint appointment with the Department of Electrical and Computer Engineering.

§§ Joint appointment with the Department of Mechanical and Environmental Engineering.

* Joint appointment with the Department of Chemical Engineering.

** Joint appointment with the Department of Physics.

*** Joint appointment with the Department of Chemistry.

Affiliated Faculty

Glenn H. Fredrickson, Ph.D. (Chemical Engineering)

Glenn E. Lucas, Ph.D. (Chemical Engineering, Mechanical and Environmental Engineering)

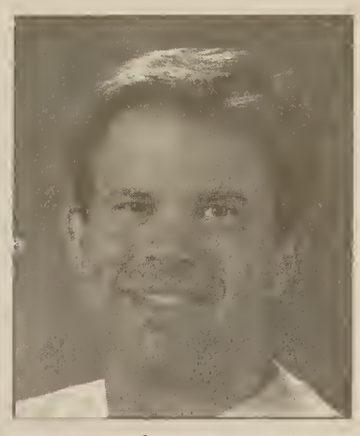
Joseph A. N. Zasadzinski, Ph.D. (Chemical Engineering)

The Department of Materials was conceptualized and built under two basic guidelines: to educate graduate students in advanced materials and to introduce them to novel ways of doing research in a collaborative, multidisciplinary environment. Advancing materials technology today—either by creating new materials or improving the properties of existing ones—requires a synthesis of expertise from the classic materials fields of metallurgy, ceramics, and polymer science, and such fundamental disciplines as applied mechanics, chemistry, and solid-state physics. Since no individual has the necessary breadth and depth of knowledge in all these areas, solving advanced materials problems demands the integrated efforts of scientists and engineers with different backgrounds and skills in a research team. The department has effectively transferred the research team concept, which is the operating mode of the high technology industry, into an academic environment.

The department has major research groups working on a wide range of advanced inorganic and organic materials, including high performance composites, high temperature coatings and multilayers, advanced structural alloys, intermetallics, ceramics and polymers, compound semiconductors, high Tc superconductors, electronic polymers and organic solids, optical, optoelectronic, piezoelectric, ferroelectric and magnetostrictive materials, liquid crystals, surface-active materials, catalysts, colloids, surfactants, biopolymers and gels. The groups are typically multidisciplinary involving faculty, postdoctoral researchers and graduate students working on the synthesis and processing, structural characterization, property evaluation, microstructure-property relationships and mathematical models relating micromechanisms to macroscopic behavior. The department has close collaborations with, and a number of faculty have joint appointments in, the Departments of Mechanical and Environmental Engineering (mechanics and design), Chemical Engineering (fluids and environmental effects), Electrical and Computer Engineering (electronic devices), Physics, Chemistry, and Biology (EEMB and MCDB).

Five-Year Bachelor of Science Engineering/Master of Science Materials Program

A program combining a bachelor of science in chemical, electrical, or mechanical engineering



Timothy Deming

ASSISTANT PROFESSOR, MATERIALS & CHEMISTRY

Timothy Deming, assistant professor of materials and chemistry, uses his research to show students how cutting-edge materials science applies to their everyday lives.

"People exposed me to science when I was younger, and I want to do the same for others."

He is part of a team trying to create artificial proteins for biotechnical and biomedical applications and find ways to use polymers to fight disease.

"I really try to get across the basic concepts rather than supplying them with excess information," he explains. "I try to give students a glimpse of how this stuff they're learning comes into their basic lives and how their understanding of these concepts helps them understand the world around them."

Deming became interested in science as a junior high and high school student, but decided to pursue it as a career after working in a research lab as an undergraduate. He enjoys the opportunity teaching gives him to introduce students to his field of study.

"People exposed me to science when I was younger, and I want to do the same for others."

with a master of science degree in materials provides an opportunity for outstanding undergraduates to earn both degrees in five years. Additional information about this program is available from the College of Engineering Undergraduate Office. Interested students should inform the Undergraduate Studies Office in the College of Engineering of their intention to pursue this program in the beginning of the spring quarter of their sophomore year. Transfer students interested in the combined degree program should contact the undergraduate advising office at the earliest opportunity. In addition to fulfilling undergraduate degree requirements, B.S./M.S. degree candidates must meet Graduate Division degree requirements, including university requirements for residence and units of coursework as described in the chapter "Graduate Education at UCSB."

Graduate Program

In addition to departmental requirements, program applicants and candidates for graduate degrees must fulfill University requirements described in the chapter "Graduate Education at UCSB."

Admission

Undergraduate preparation for the materials M.S./Ph.D. includes a degree in engineering, physical sciences, or mathematics. However, the breadth of the materials field requires that flexibility be built into the undergraduate educational requirements. Upper-division courses in several of the following topics are expected:

1. mathematics—24 units in advanced calculus, ordinary differential equations, special functions and complex variable theory,
2. engineering thermodynamics—9 units,
3. solid state physics—9 units,
4. physical chemistry—12 units,
5. materials science—12 units in mechanical properties, electronic properties, structure, processing,
6. electronics—12 units,
7. mechanics—9 units in advanced strength of materials, elasticity, and structures.

Incoming students are not expected to meet all upper-division requirements, but must satisfy the requirements in mathematics and at least two other areas representing about one full year of undergraduate study. The areas that should be covered will depend on the student's chosen graduate field of study within materials. Some deficiencies can be satisfied during the first year of graduate study by taking upper-division undergraduate courses in the new area of specialization.

Students with a B.S. degree (having a 3.2 minimum grade-point average) are eligible to be admitted to M.S./Ph.D. status and those with an M.S. degree (having a 3.5 minimum grade-point average) are eligible to be admitted to Ph.D. status. The department gives priority for admission to students who are interested in academics and high quality research. Admission is available for all quarters, with no departmental deadlines beyond those of the Graduate Division. Satisfactory performance in the verbal, quantitative, and analytical sections of the Graduate Record Examination is required. Applicants whose native language is not English must receive a score of at least 600 (250 on the computer-based test) on the Test of English as a Foreign Language (TOEFL) prior to admission to UCSB. Any applicant who has received a bachelor's or master's degree from an accredited U.S. college or university is exempt from this requirement.

Master of Science—Materials

Students wishing to terminate their studies with an M.S. must do so under Plan 1. Students in the B.S./M.S. program follow Plan 2. The M.S. degree program introduces students to the knowledge needed to proceed to candidacy as well as to the nature of research and the discipline of independent work. Students wishing to continue on for the Ph.D. must achieve a 3.5 grade-point average in their coursework and pass the preliminary examination discussed below in the "Doctor of Philosophy" section.

Plan 1. Students in this plan are required to (1) complete 42 units, of which 24 units would be approved 200-level courses, 6 units of seminars, and 12 units of thesis research, and (2) submit an acceptable thesis based on original research. The expected time for completion is two years.

Plan 2. Students in this plan must be participants in the five-year B.S./M.S. program and are required to (1) complete 42 units approved by the department, including no fewer than 24 units of coursework numbered 200-299, no fewer than 3 and no more than 9 units of independent studies (Materials 596), and (2) submit an acceptable engineering report based on their independent studies. Further details are available from the Department of Materials Graduate Affairs Office or the Graduate Advisor.

Doctor of Philosophy—Materials

The Department of Materials offers a program leading to a Ph.D. degree with specializations in the following major areas: electronic, inorganic macromolecular/biomolecular, and structural materials. The curriculum in each area has the flexibility needed to provide multidisciplinary educational opportunities in the field of advanced materials. Incoming students are expected to design a tentative program of study suitable to their interests and research field with the assistance of their advisor and submit it for approval to the Graduate Affairs Committee within the first two quarters of residence. Each study program consists of a specified course sequence with emphasis on lectures, laboratory experience, and seminars.

Degree Requirements

In developing an appropriate, interdisciplinary course of study, doctoral students are expected to take all the available courses in their major area of interest as well as courses designed to broaden their knowledge of other materials. It is expected that individual students will develop their study plans in conjunction with their faculty advisors, and that the courses will be selected from the main sequence of courses (offered every year) from the four principal areas of emphasis in the department plus general courses as well as more specialized courses offered on a less frequent basis. The study plan must be approved by the faculty advisor and the department Graduate Affairs Committee. It may be modified during the course of the student's program.

Students admitted with a bachelor's degree are required to complete a minimum of 66 units of academic work distributed as follows: 36 units of 200-level courses, 15 units of seminars and/or independent studies, and 15 units of thesis research.

Students are required to serve as teaching assistants for at least one quarter while in residence at UCSB, in either materials courses offered to undergraduate students or those departments providing courses consistent with the student's undergraduate background.

Students entering with an M.S. degree may petition to waive certain unit requirements for the Ph.D. (up to 15 units of 200-level courses) deemed to have been fulfilled by Master's studies elsewhere. There is no foreign language requirement in either the M.S. or Ph.D. program. Doctoral students, however, are encouraged to become proficient in one or more foreign languages relevant to the technical literature in their fields. Students have the opportunity to take upper-division undergraduate courses, for which they have the necessary prerequisite qualifications, as preparation for the graduate program. Up to 8 units of such courses can be taken for credit toward the 200-level course requirements.

A preliminary examination is required for continuation in the Ph.D. program. It is to be taken after two quarters in residence for those entering with an M.S. degree and in the fourth quarter for those entering with a B.S. degree. The exam is administered in an oral format and consists of five different subject areas, three selected from within the student's intended major field of study, and two minors from among the other three fields.

Students must pass an oral qualifying examination covering a dissertation proposal based on original research. The examination committee consists of five faculty with at least three having more than a 0% appointment in the Department of Materials and at least one who does not have an appointment in the Materials Department. Upon passing this examination, students advance to candidacy for the Ph.D. The examination committee typically becomes the dissertation committee.

Students conduct original research under the supervision of their research advisor(s) and prepare a dissertation. Students submit their final draft to the dissertation committee and to the department chair. The committee ascertains the suitability of the draft. Candidates are then responsible for amendments to the dissertation based on the committee recommendations. When the dissertation is approved by the committee, the candidate presents a formal defense of the dissertation in a public seminar. Students are expected to complete a Ph.D. within five years after entry at the B.S. level and three years after M.S. level entry.

Materials Courses

LOWER DIVISION

10. Materials in Society, the Stuff of Dreams
(4) GOSSARD

Not open to engineering, pre-computer science, or computer science majors. Lecture, 3 hours; discussion 1 hour.

A survey of new technological substances and materials, the scientific methods used in their development, and their relation to society and the economy. Emphasis on uses of new materials in the human body, electronics, optics, sports, transportation, and infrastructure.

UPPER DIVISION

100A. Structure and Properties I
(3) STAFF

Prerequisites: Chemistry 1A-B-C; Physics 4; and, Mathematics 5A-B-C. Lecture, 3 hours.

An introduction to materials in modern technology. The internal structure of materials and its underlying principles: bonding, spatial organization of atoms and molecules, structural defects. Electrical, magnetic and optical properties of materials, and their relationship with structure.

100B. Structure and Properties II
(3) STAFF

Prerequisite: junior standing.

Not open for credit to students who have completed Chemical Engineering 185 or ME 180. Lecture, 3 hours.

Mechanical and thermal properties of engineering materials and their relationship to bonding and structure. Elastic, flow, and fracture behavior; time dependent deformation and failure; friction, wear and lubrication; thermal stresses and related failure modes. Stiffening, strengthening, and toughening mechanisms.

100C. Fundamentals of Structural Evolution
(3) STAFF

Prerequisites: Materials 100A or ECE 132; and, Materials 100B or Chemical Engineering 185 or ME 180. Lecture, 3 hours.

An introduction to the thermodynamic and kinetic principles governing structural evolution in materials. Phase equilibria, diffusion and structural transformations. Metastable structures in materials. Self-assembling systems. Structural control through processing and/or imposed fields. Environmental effects on structure and properties.

135. Biophysics and Biomolecular Materials
(3) STAFF

Prerequisites: Physics 5 or 6C.

Same course as Physics 135.

Structure and function of cellular molecules (lipids, nucleic acids, proteins, and carbohydrates). Genetic engineering techniques of molecular biology. Biomolecular materials and biomedical applications (e.g., bio-sensors, drug delivery systems, gene carrier systems).

160. Introduction to Polymer Science
(3) STAFF

Prerequisites: Chemistry 107A-B or 130A-B.

Same course as Chemical Engineering 160.

Introductory course covering synthesis, characterization, structure, and mechanical properties of polymers. The course is taught from a materials perspective and includes polymer thermodynamics, chain architecture, measurement and control of molecular weight as well as crystallization and glass transitions.

162A. The Quantum Description of Electronic Materials
(4) HU

Prerequisites: ECE 105, 130A-B, and 134; open to ECE and materials majors only.

Same course as ECE 162A.

Electrons as particles and waves, Schrodinger's equation and illustrative solutions. Tunneling. Atomic structure, the Exclusion Principle and the periodic table. Bonds. Free electrons in metals. Periodic potentials and energy bands.

162B. Fundamentals of the Solid State
(4) COLDREN

Prerequisites: ECE 162A; open to ECE and materials majors only.

Same course as ECE 162B.

Crystal lattices and the structure of solids, with emphasis on semiconductors. Lattice vibrations, electronic states and energy bands. Electrical and thermal conduction. Dielectric and optical properties. Semiconductor devices: Diffusion, P-N junctions and diode behavior.

185. Materials in Engineering
(3) LEVI

Prerequisite: Materials 100B and 100C.

Same course as ME 185. Lecture, 3 hours.

Introduction to the main families of materials and the principles behind their development, selection, and behavior. Discussion of the generic properties of metals, ceramics, polymers, and composites more relevant to structural applications. Emphasis on the relationship of properties to structure and processing.

186. Manufacturing and Materials
(3) LEVI, LECKIE

Prerequisites: ME 151A-B-C and 165, and Materials 100B.

Same course as ME 186. Lecture, 3 hours.

Introduction to the fundamentals of common manufacturing processes and their interplay with the structure and properties of materials as they are transformed into products. Emphasis on process understanding and the key physical concepts and basic mathematical relationships involved in each of the processes discussed.

GRADUATE COURSES

201. Thermodynamics and Phase Equilibria
(3) STAFF

Prerequisite: consent of instructor.

Same course as ME 262. Lecture, 3 hours.

Advanced thermodynamics with emphasis on phase equilibria, properties of solutions, and multicomponent systems.

202. Kinetic Processes in Materials
(3) ODETTE

Prerequisite: consent of instructor. Lecture, 3 hours.

Kinetics of transformations of materials with emphasis on first order phase transformations.

203. Transition Metal Oxides
(3) CHEETHAM

Same course as Chemistry 267. Lecture, 3 hours.

Introduction to transition metal oxides. Ligand field theory. Structural basis of magnetism.

204. Introduction to Magnetism and Magnetic Materials
(3) HILL

Review of elementary magnetism magnetostatics. Discussion of atomic origins of magnetism. Properties of ferro-, ferri-, para-, dia-, and antiferro-magnetics, and the theories that describe them. Magnetic phenomena, and magnetic materials in technological applications.

205. Wide Band Gap Materials
(3) DENBAARS

Lecture, 3 hours.

Review of the emerging field of wide band-gap semiconductor materials. Electronic and optical properties of GaN, SiC, diamond and related materials. Emphasis on key technologies for epitaxial growth and fabrication. Applications in advanced high temperature electronic devices and blue light emitters.

206A. Fundamentals of Electronic Solids I
(4) KROEMER, PETROFF

Prerequisite: ECE 162A-B.

Same course as ECE 215A.

Introduction into the physics of semiconductors for beginning engineering graduate students. Crystal structure. Reciprocal lattice and crystal diffraction. Electrons in periodic structures. Energy and bands. Semiconductor electrons and probes, Fermi statistics.

206B. Fundamentals of Electronic Solids II
(4) GOSSARD

Prerequisite: ECE 162A-B.

Same course as ECE 215B.

Phonons, electron scattering, electronic transport, selected optical properties, heterostructures, effective mass, quantum wells, two-dimensional electron gas, quantum wires, deep levels, and crystal binding.

207. Continuum Mechanics
(3) MCMEEKING

Prerequisite: Mechanical Engineering 152A-B; consent of instructor.

Same course as Mechanical Engineering 219. Lecture, 3 hours.

Matrices and tensors, stress deformation and flow, compatibility conditions, constitutive equations, field equations and boundary conditions in fluids and solids, applications in solid and fluid mechanics.

208. Crystallography and Structure Determination
(4) CHEETHAM

Prerequisite: consent of instructor.

Not open for credit to students who have completed Materials 209B. Lecture, 4 hours.

Topics in structure determination: structure factors, integrated intensities, data collection, the phase problem, Patterson synthesis, direct methods, structure refinement, Debye-Waller factors, thermal diffuse scattering and extinction. Rietveld analysis of powder diffraction data. Synchrotron X-rays, neutron diffraction, electron diffraction, non-crystalline materials.

209A. Diffraction Methods
(3) SPECK

Diffraction theory: Fourier transformation, Schrodinger equation, Maxwell's equations, kinematical theory, Fresnel diffraction, Fraunhofer diffraction, scattering of X-rays, electrons and neutrons by isolated atoms and assemblies of atoms, pair correlation and radial distribution functions. Basic symmetry operations, point groups, space groups.

209C. Electron Microscopy
(3) SPECK

Prerequisite: consent of instructor. Lecture, 3 hours.

Electron microscopy to study defect structures, elastic and inelastic scattering, kinematic theory of image contrast, bright and dark field imaging, two-beam conditions, contrast from imperfections, dynamical theory of diffraction and image contrast. Howie Whellan equations, dispersion surface.

211A. Engineering Quantum Mechanics I
(4) KROEMER

Prerequisites: ECE 105 and 162A-B.

Same course as ECE 211A. Lecture, 4 hours.

Wave-particle duality; bound states; uncertainty relations; expectation values and operators; variational principle; eigenfunction expansions; perturbation theory I. Treatment matches needs and background of ECE and materials students emphasizing solid state or quantum electronics.

211B Engineering Quantum Mechanics II
(4) KROEMER

Prerequisites: Materials 211A and 206A.

Same course as ECE 211B. Lecture, 4 hours.

Continuation of Materials 211A; symmetry and degeneracy; electrons in crystals, angular momentum; perturbation theory II; transition probabilities; quantized fields and radiative transitions; magnetic fields; electron spin; indistinguishable particles.

213. Crystal Growth and Thin Film Epitaxy
(3) PETROFF

Prerequisite: consent of instructor.

Same course as ECE 213. Lecture, 3 hours.

Nucleation and epitaxy: homogeneous and

heterogeneous epitaxy. Growth mechanism, defect creation. Kinetics and thermodynamics of crystal growth for: liquid phase epitaxy, vapor phase epitaxy, and molecular beam epitaxy of metals and semiconductors.

214. Statistical Thermodynamics
(3) PINE

Prerequisite: physical chemistry and consent of instructor.

Ensembles and statistical mechanical formulation of the laws of thermodynamics. Classical statistical mechanics; quantum statistics; translational, rotational, vibrational, and electronic partition functions. Chemical equilibria. Real gases and distribution functions: other interacting systems: liquids and solids: Monte Carlo simulations.

215A. Semiconductor Device Processing
(4) STAFF

Prerequisites: ECE 124B-C.

Same course as ECE 220A. Lecture, 3 hours; discussion, 1 hour.

Intensive theoretical and laboratory instruction in solid-state device and integrated circuit fabrication. Topics include (1) semiconductor material properties and characterization; (2) phase diagrams; (3) diffusion; (4) thermal oxidation; (5) vacuum processes; (6) thin-film deposition; (7) scanning electron microscopy. Both gallium arsenide and silicon technologies are presented.

215B-C. Semiconductor Device Processing
(4-4) GOSSARD, HU

Prerequisite: Materials 215A.

Same course as ECE 220B-C. Lecture, 3 hours, discussion, 1 hour.

Continued theoretical and laboratory instruction in the fundamentals, the design, the fabrication, and the characterization of junction and field-effect devices. Topics will include bipolar characterization, design, fabrication, and testing. The laboratory effort initiated in Materials 215A will be continued in these two quarters.

216A. Defects in Materials
(3) PETROFF

Prerequisite: consent of instructor.

Same course as ECE 216A. Lecture, 3 hours.

The nature of point, line, and planar defects in crystalline solids. Dislocation basis for deformation behavior. Effect of different defects on electrical and optical properties of solids. Common defects in metals, semiconductors, and ceramics.

216B. Defects in Semiconductors
(3) PETROFF

Prerequisites: ECE 162A-B.

Same course as ECE 216B. Lecture, 3 hours

Structural and electronic properties of elementary defects in semiconductors. Point defects and impurity complexes. Deep levels. Dislocations and grain boundary electronic properties. Measurement techniques for radiative and nonradiative defect centers. (normally offered alternate years)

217. Molecular Beam Epitaxy and Band Gap Engineering
(3) GOSSARD

Prerequisites: ECE 162A-B, and 213.

Same course as ECE 217. Lecture, 3 hours.

Fundamentals and recent research developments in the growth and properties of thin crystalline films of electronic and optical materials by the process of molecular beam epitaxy. Artificially structured materials with quantized electron confinement and artificially engineered electronic band structure properties. (normally offered alternate years)

218. Introduction to Inorganic Materials
(3) CHEETHAM

Prerequisite: Chemistry 274.

Same course as Chemistry 277.

Structures of inorganic materials: close-packing, linking of simple polyhedra. Factors that control structure: ionic radii, covalency, ligand field effects, metal-metal bonding, electron/atom ratios. Structure-property relationships in e.g. spinels, garnets, perovskites, rutiles, fluorites, zeolites, B-aluminas, graphites, common inorganic glasses.

219. Phase Transformations
(3) CLARKE

Prerequisite: consent of instructor.

Introduction to the unifying concepts underlying phase transformations in metals, ceramics, polymers, and electronic materials. Includes the thermodynamics, kinetics, crystallography and microstructural characteristics of displacive and diffusional transformations. Role of elastic, compositional, configurational, electrical, magnetic and gradient energy contributions. (normally offered alternate years)

220. Mechanical Behavior of Materials
(3) ZOK, ODETTE

Concepts of stress and strain. Deformation of metals, polymers, and ceramics. Elasticity, viscoelasticity, plastic flow, and creep. Linear elastic fracture mechanics. Mechanisms of ductile and brittle fracture.

222A. Colloids and Interfaces I
(3) ISRAELACHVILI

Prerequisite: consent of instructor.

Same course as Chemical Engineering 222A. Lecture, 3 hours.

Introduction to the various intermolecular interactions in solutions and colloidal systems: Van der Waals, electrostatic, hydrophobic, solvation, H-bonding. Introduction to colloidal systems: particles, micelles, polymers, etc. Surfaces: wetting, contact angles, surface tension, etc.

222B. Colloids and Interfaces II
(3) ZASADZINSKI

Prerequisite: consent of instructor.

Same course as Chemical Engineering 222B.

Recommended preparation: Materials 222A or Chemical Engineering 222A. Lecture, 3 hours.

Continuation of 222A. Interparticle interactions, coagulation, flocculation, DLVO theory, steric interactions, polymer-coated surfaces, polymers in solution, viscosity in thin liquid films. Surfactant self-assembly: micelles, micro-emulsions, lamellar phases, etc. Surfactants on surfaces: Langmuir-Blodgett films, adsorption, adhesion.

223A-B. Combinatorial Methods in Chemistry and Chemical Engineering
(3-3) MCFARLAND

Prerequisites: prior basic coursework in inorganic and organic chemistry; consent of instructor.

Same course as Chemistry 203A-B and Chemical Engineering 203A-B. Lecture, 3 hours.

Foundation and methodologies of chemical, biological, and materials research and discovery using automated, high-speed synthesis and screening. Emphasis on the chemical, biochemical, physical, and mathematical fundamentals necessary for experimental design, synthesis, high-throughput screening, and analysis of combinatorial libraries.

226. Electrical and Optical Properties of Oxides
(3) CLARKE

Lecture, 3 hours.

Physical basis for ferroelasticity, ferroelectricity and piezoelectricity in ceramics. Point defects and doping effects on conductivity. Role of grain boundaries and variations in defect chemistry on electrical properties. Optical, nonlinear and electro-optical effects and figures of merit.

227. Vapor Phase Epitaxy of Electronic Materials
(3) DENBAARS

Lecture, 3 hours.

Electronic and optical properties of thin films grown by vapor phase transport techniques. Growth mechanisms, kinetics and thermodynamics of vapor phase epitaxy. Special emphasis on the process of metalorganic vapor phase epitaxy for optoelectronic materials and devices. (normally offered alternate years)

228. Computational Materials
(3) CLARKE

Lecture, 3 hours.

Basic computational techniques and their application to simulating the behavior of materials. Techniques include: finite difference methods, Monte Carlo, molecular dynamics, cellular automata, and simulated annealing. (normally offered alternate years)

230. Elasticity
(3) MCMEEKING

Prerequisites: ME 219; consent of instructor.

Same course as ME 230. Lecture, 3 hours.

Review of the field equations of elasticity. Energy principles and uniqueness theorems. Elementary problems in one and two dimensions. Stress functions, complex variable methods, and three-dimensional potential functions. Fundamental solutions in two and three dimensions. Approximate methods.

232. Plasticity
(3) MCMEEKING

Prerequisites: Materials 230; consent of instructor.

Same course as ME 232. Lecture, 3 hours.

Plastic, creep, and relaxation behavior of solids. Mechanics of inelastically strained bodies; plastic stress-strain laws; flow potentials. Torsion and bending of prismatic bars, expansion of thick shells, plane plastic flow, slip line theory. Variational formulations, approximate methods. (normally offered alternate years)

234. Fracture Mechanics
(3) STAFF

Prerequisites: Materials 230; consent of instructor.

Same course as ME 275. Lecture, 3 hours.

Analytic solutions of a stationary crack under static loading. Elastic and elastoplastic analysis. The J integral. Energy balance and crack growth. Criteria for crack initiation and growth. Dynamic crack propagation. Fatigue. The micromechanics of fracture.

237. Advanced Deformation and Fracture
(3) ZOK

Prerequisite: Materials 220. Lecture, 3 hours.

Plastic flow in crystalline solids; strengthening mechanisms; creep deformation; creep maps; fracture modes; toughening mechanisms; subcritical cracking; fatigue; cavitation and rupture.

238A-B. Rheology of Polymeric Liquids
(3-3) LEAL, PINE

Same course as Chemical Engineering 238A-B. Lecture, 3 hours.

A fundamentally-based course focusing on: the microstructural and molecular basis of viscoelastic flow for complex fluids, with a particular focus on polymeric liquids, liquid crystals and colloidal suspensions; experimental techniques and the analysis of viscoelastic flow phenomena.

239. Light Scattering in Complex Fluids
(3) PINE

Prerequisite: consent of instructor.

Same course as Chemical Engineering 239. Lecture, 3 hours.

Principles of static and dynamic light scattering applied to complex fluids. Scattering of electromagnetic waves, the static and dynamic structure factors, and the analysis of multiple scattering.

240. Finite Element Structural Analysis
(3) STAFF

Prerequisites: ME 167 and Materials 207.

Same course as ME 271. Lecture, 3 hours.

Definitions and basic element operations. Displacement approach in linear elasticity. Element formulation: direct methods and variational methods. Global analysis procedures: assemblage and solution. Plane stress and plane strain. Solids of revolution and general solids. Isoparametric representation and numerical integration. Computer implementation.

240. Finite Element Structural Analysis
(3) STAFF

Prerequisites: ME 167 and Materials 207.

Same course as ME 271. Lecture, 3 hours.

Definitions and basic element operations. Displ

250. Transport Phenomena in Materials Processing
(3) LEVI

Not open to students who have completed Materials 289A. Lecture, 3 hours.

Fundamental concepts and mathematical descriptions of mass and energy transport as pertinent to the synthesis, processing and application of materials. Focus on transport problems within solids and at their interfaces with fluids. Emphasis on inorganic materials, including semiconductors.

251A. Ceramic Processing
(3) LANGE

Prerequisite: consent of instructor.

Same course as Chemical Engineering 219A. Not open for credit to students who have completed Nuclear Engineering 219A. Lecture, 3 hours.

Processing of ceramics: glass-ceramics, gelation, and powder methods. Powder methods will be emphasized from powder manufacture through consolidation of shape, with introduction to densification. Colloidal routes to powder preparation and consolidation.

251B. Densification and Microstructural Control
(3) LANGE

Prerequisite: consent of instructor.

Same course as Chemical Engineering 219B. Lecture, 3 hours.

Mass transport and kinetic sintering theories. Thermodynamics of pore phase disappearance. Grain growth during densification. Effects of a liquid phase (liquid phase sintering). Effects of inert phases on densification. Effects of applied pressure. Control of grain growth after densification.

253. Liquid Crystal Materials
(4) SAFINYA

Prerequisite: consent of instructor. Lecture, 3 hours; laboratory, 2 hours.

Thermotropic and lyotropic liquid crystals (LC's). Classification and phase transitions. LC's in display technology. Laboratory experimentation using X-ray diffraction and polarized optical microscopy to characterize LC phases.

261. Composite Materials
(3) ZOK

Prerequisite: consent of instructor.

Same course as ME 265. Lecture, 3 hours.

Stress/strain relations in composites. Residual stresses. Fracture resistance of organic and inorganic matrix composites. Statistical aspects of fiber failure. Composite laminates and delamination cracks. Cumulative damage concepts. Interface properties. Design criteria. (normally offered alternate years)

262. Structural Ceramics
(3) LANGE

Prerequisite: consent of instructor.

Same course as Chemical Engineering 262. Lecture, 3 hours.

Ceramic processing methods. Flaws in ceramics. Fracture resistance and microstructure. Probabilistic design concepts. Nondestructive evaluation approaches. Reinforced ceramics. High temperature properties. Impact damage.

264. Reliability and Degradation of Materials
(3) LUCAS

Prerequisites: Materials 201 and 202. Lecture, 3 hours.

Effects of service environment on properties of materials including oxidation, corrosion, thermal aging, radiation damage. Effects of property degradation on service life. (normally offered alternate years)

266. Advanced Solid Mechanics
(3) MCMEEKING

Prerequisite: Materials 207.

Same course as ME 266.

Concepts with current significance in materials engineering will be covered. Examples include microstructural evolution, materials processing, properties of heterogeneous materials, microscopic modelling and manufacturing. Basic phenomena, analytical aspects, and the link between scientific ideas and engineering practice will be emphasized. (normally offered alternate years)

271A. Synthesis and Properties of Macromolecules
(3) DEMING

Prerequisite: consent of instructor.

Not open for credit to students who have completed Materials 273B. Lecture, 3 hours.

Basics of preparation of polymers and macromolecular assemblies, and characterization of large molecules and assemblies. Discussion of chemical structure, bonding, and reactivity.

271B. Structure and Characterization of Complex Fluids
(3) SAFINYA

Not open for credit to students who have completed Materials 280. Lecture, 3 hours.

Structure, phase behavior, and phase transitions in complex fluids. Characterization techniques including x-ray and neutron scattering, and light and microscopy methods. Systems include colloidal and surfactant dispersions (e.g., polyballs, microemulsions, and micelles), polymeric solutions and biomolecular materials (e.g., lyotropic liquid crystals).

271C. Properties of Macromolecules
(3) KRAMER

Not open for credit to students who have completed Materials 210. Lecture, 3 hours.

Fundamentals of the properties of macromolecular solutions, melts, and solids. Viscosity, diffusion and light scattering from dilute solutions. Elements of macromolecular solid state structure. Thermal properties and processes. Mechanical and transport properties. Introduction to electrical and optical properties of macromolecules.

273. Experiments in Macromolecular Materials
(3) STAFF

Not open for credit to students who have completed Materials 273C. Lecture, 3 hours; laboratory, 4 hours.

Experiments using X-ray and light scattering, optical and electron microscopy. Crystalline, quasi-crystalline, and amorphous materials. Solid, solution, and colloidal samples.

274. Solid State Inorganic Materials
(3) STAFF

Prerequisites: Chemistry 173A-B.

Same course as Chemistry 274. Lecture, 3 hours.

An introductory course describing the synthesis, physical characterization, structure, electronic properties, and uses of solid state materials. (normally offered alternate years)

275. Polymer Physics
(3) STAFF

Prerequisite: Materials 273A. Lecture, 3 hours.

Polymer dynamics of solutions and melts. Spinodal decomposition, gels, copolymers, and blends. Non-equilibrium behavior. (normally offered alternate years)

276A. Biomolecular Materials I: Structure and Function
(3) SAFINYA

Prerequisite: Physics 135. Lecture, 3 hours.

Survey of classes of biomolecules (lipids, carbohydrates, proteins, nucleic acids). Structure and function of molecular machines (enzymes for biosynthesis, motors, pumps). (normally offered alternate years)

276B. Biomolecular Materials II: Applications
(3) SAFINYA

Prerequisite: Physics 135 or Materials 276A. Lecture, 3 hours.

Interactions and self assembly in biomolecular materials. Chemical and drug delivery systems. Tissue engineering. Protein synthesis using recombinant nucleic acid methods: advanced materials development. Nonviral gene therapy. (normally offered alternate years)

277. Synthesis of Biomolecular Materials
(3) DEMING

Prerequisite: consent of instructor. Lecture, 3 hours.

Methods of preparation of biopolymers and biomolecular assemblies. Uses of biological techniques to engineer biomaterials. Uses of chemical techniques to prepare biological molecules as well as artificial biomimetic materials. Comparison of biological, chemical, and mixed synthesis for different applications. (normally offered alternate years)

278. Interactions in Biomolecular Complexes
(3) PINCUS

Prerequisite: consent of instructor. Lecture, 3 hours.

Theory of Coulombic interactions of biopolymers, lipid membranes, and their complexes. Mean field theories, fluctuation and correlation effects. (normally offered alternate years)

279. X-Ray, Electron, Neutron, and Light Scattering
(3) STAFF

Lecture, 3 hours.

The use of diffraction and scattering techniques for elucidating the structure, microstructure and defects in materials at different length scales. Both the formal basis and the underlying concepts that span the application to different classes of materials are described.

282. Transitions Metal Catalyzed Polymerization
(3) DEMING

Prerequisite: consent of instructor.

Same course as Chemistry 221. Lecture, 3 hours.

Examination of strategies for controlling molecular weight, chain distribution, sequence, endgroups, and stereochemistry. Discussion of the influence of these variables over structure and properties. Tacticity, control, Ziegler-Natta catalysis, living polymerizations, stereoselective and enantioselective polymerizations, secondary and tertiary structures, polymer assemblies and biological polymerizations. (normally offered alternate years)

284. Synthetic Chemistry of Macromolecules
(3) DEMING

Prerequisite: consent of instructor.

Same course as Chemistry 285. Lecture, 3 hours.

Molecular architecture and classification of macromolecules. Different methods of the preparation of polymers: free radical polymerization, ionic polymerization, condensation polymerization and coordination polymerization. Bulk, solution, and emulsion polymerization. Principles of copolymerization, block copolymerization, grafting, network formation, chemical reactions on polymers.

285. Structure and Properties of Interfaces
(3) SPECK

Prerequisite: consent of instructor. Lecture, 3 hours.

Homophase and heterophase interfaces. Dichromatic pattern of interfaces (group theoretical description). Geometrical models of interfaces. Relaxations at interfaces and atomic structure, energies of interfaces. Bonding across interfaces. Thermodynamics and wetting of interfaces. Properties of interfaces such as diffusion, segregation and fracture resistance. (normally offered alternate years)

286AA-ZZ. Special Topics in Inorganic Materials
(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours.

This course will be offered on an irregular basis and will include in-depth discussions of advanced topics in inorganic materials.

287AA-ZZ. Special Topics in Macromolecular Materials
(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours.

This course will be offered on an irregular basis and will concern in-depth discussions of advanced topics in macromolecular materials.

288AA-ZZ. Special Topics in Electronic Materials.
(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours.

This course will be offered on an irregular basis and will concern in-depth discussions of advanced topics in electronic materials.

289AA-ZZ. Special Topics in Structural Materials
(3) STAFF
Prerequisite: consent of instructor. Lecture, 3 hours.
This course will be offered on an irregular basis and will concern in-depth discussions of advanced topics in structural materials.

290. Research Group Studies
(1-3) STAFF
Prerequisite: consent of instructor. Seminar, 1-3 hours.
In this course students or instructors present recently published papers and/or results relevant to their own research.

299. Seminar in Materials Science and Engineering
(3) STAFF
Prerequisite: consent of instructor. Seminar, 2 hours.
A seminar course recommended at least once per year for all materials students. Internal and external speakers will present mini-courses on advanced topics which should be of general interest to materials scientists. Students will prepare status reports.

501. Teaching Assistant Practicum
(1-4) STAFF
Prerequisite: consent of graduate advisor. This course is required for new teaching assistants.
No unit credit allowed toward advanced degree. Preparation, 1 hour; other, 2 hours.
Practical experience in the various activities associated with teaching including: lecturing, supervision of laboratories and discussion sections, preparation, and grading of homework and exams.

596. Directed Reading and Research
(2-4) STAFF
Tutorial, 1-3 hours.
Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the department chair.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisite: consent of graduate advisor.
S/U grading only. Preparation, variable hours; tutorial, 1-3 hours.
For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF
Prerequisite: consent of chair of student's doctoral committee.
S/U grading only. Preparation, variable hours; tutorial, 1-3 hours.
Research and preparation of the dissertation.

Mechanical and Environmental Engineering

Department of Mechanical and Environmental Engineering, Engineering II, Room 2355; Telephone (805) 893-2430
Web site: www.me.ucsb.edu
Chair: Robert M. McMeeking
Vice Chair: Stephen R. McLean

Faculty

Bassam Bamieh, Ph.D., Rice University, Assistant Professor (control systems design with applications to fluid flow problems)

* **Sanjoy Banerjee**, Ph.D., University of Waterloo, Professor (transport processes, multiphase systems, process safety)

Glenn E. Beltz, Ph.D., Harvard, Associate Professor (nanostructures and brittle-ductile transitions, solid mechanics)

Ted D. Bennett, Ph.D., UC Berkeley, Assistant Professor (thermal science, laser processing)

John C. Bruch, Jr., Ph.D., Stanford University, Professor (applied mathematics, numerical solutions and analysis)

Mohammed Dahleh, Ph.D., Princeton, Professor, Associate Director of Center for Control Engineering and Computation (control and stability of dynamical systems)

Keith T. Kedward, Ph.D., University of Wales, Professor (design of composite systems)

§ **Carlos Levi**, Ph.D., University of Illinois at Urbana-Champaign, Professor (materials processing, advanced solidification technologies, fine structures, process modelling, and microstructural analysis)

Wilbert J. Lick, Ph.D., Rensselaer Polytechnic Institute, Professor (oceanography and limnology, applied mathematics)

* **Glenn E. Lucas**, Ph.D., Massachusetts Institute of Technology, Professor (mechanical properties of structural materials, environmental effects, structural reliability)

§ **Noel C. MacDonald**, Ph.D., UC Berkeley, Professor (microelectromechanical systems, applied physics, materials, mechanics, nanofabrication)

Eric F. Matthys, Ph.D., California Institute of Technology, Professor (heat transfer, fluid mechanics, rheology)

Stephen R. McLean, Ph.D., University of Washington, Professor (fluid mechanics, physical oceanography, sediment transport)

§ **Robert M. McMeeking**, Ph.D., Brown University, Professor (mechanics of materials, fracture mechanics, plasticity, computational mechanics)

Eckart Meiburg, Ph.D., University of Karlsruhe, Professor (computational fluid dynamics, fluid mechanics)

Carl D. Meinhart, Ph.D., University of Illinois at Urbana-Champaign, Assistant Professor (wall turbulence, microfluidics, flows in complex geometries)

Igor Mezic, Ph.D., California Institute of Technology, Associate Professor (applied mechanics, non-linear dynamics, fluid mechanics, applied mathematics)

§ **Frederick Milstein**, Ph.D., UC Los Angeles, Professor (materials science and metallurgy)

§ **G. Robert Odette**, Ph.D., Massachusetts Institute of Technology, Professor (structural reliability)

Bradley E. Paden, Ph.D., UC Berkeley, Associate Professor (control theory, kinematics, robotics)

** **Linda R. Petzold**, Ph.D., University of Illinois at Urbana–Champaign, Professor (numerical differential equations, numerical optimization, mathematical software, parallel computing, scientific computing)

Anna Stefanopoulou, Ph.D., University of Michigan, Assistant Professor (powertrain modelling and control)

* **Theofanis G. Theofanous**, Ph.D., University of Minnesota, Professor, Director of Center for Risk Studies and Safety (nuclear and chemical plant safety, multiphase flow, thermal hydraulics)

Kimberly L. Turner, Ph.D., Cornell University, Assistant Professor (microelectromechanical systems, namely sensors, actuators; dynamics, solid mechanics, measurement and characterization of microsystems motion and device parameters)

Henry T. Yang, Ph.D., Cornell University, Professor (aerospace structures, structural dynamics and stability, transonic flutter and aeroelasticity, intelligent manufacturing systems)

Walter W. Yuen, Ph.D., UC Berkeley, Professor (thermal science, radiation heat transfer, heat transfer with phase change, combustion)

Emeriti Faculty

§ **Anthony G. Evans**, Ph.D., Imperial College, London, Professor Emeritus (fundamental research on mechanical properties and fabrication of brittle materials, including fracture, deformation, creep, fatigue, erosion, wear, NDE, sintering, and impact damage)

Roy S. Hickman, Ph.D., UC Berkeley, Professor Emeritus (fluid mechanics, physical gas dynamics, computer-aided design)

Frederick A. Leckie, Ph.D., Stanford University, Professor Emeritus (mechanics of materials, engineering design)

Ekkehard P. Marschall, Dr. Ing., Technische Hochschule Hannover, Professor Emeritus (thermodynamics, heat and mass transfer, desalination, energy conversion, experimental techniques)

Thomas P. Mitchell, Ph.D., California Institute of Technology, Professor Emeritus (theoretical and applied mechanics)

Marshall Tulin, M.S., Massachusetts Institute of Technology, Professor Emeritus, Ocean Engineering Laboratory Director (hydrodynamics, aerodynamics, turbulence, cavitation phenomena, drag reduction in turbulent flows)

James P. Vanyo, Ph.D., UC Los Angeles, Professor Emeritus (rotating nonrigid bodies, fluid dynamics)

* Joint appointment with the Department of Chemical Engineering.

** Joint appointment with the Department of Computer Science.

§ Joint appointment with the Department of Materials.

Affiliated Faculty

Patricia Holden (Bren School of Environmental Science and Management)

Arturo Keller (Bren School of Environmental Science and Management)

Natalie Mahowald (Bren School of Environmental Science and Management)

The undergraduate program in mechanical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. We offer a balanced curriculum of theory and application, involving: preparation in basic science, math, computing and writing; a comprehensive set of engineering science and laboratory courses; and a series of engineering design courses starting in the sophomore year and concluding with a three course sequence in the senior year. Our students gain hands on expertise with state-of-the art tools of computational design, analysis and manufacturing that are increasingly used in industry, government and academic institutions. In addition, the Department has an 18 unit elective track program that allows students to gain depth in areas such as dynamics and controls, while maintaining appropriate breadth in the basic stem areas of the discipline. As part of their elective sequence, many students participate in a widely recognized design project program which emphasizes competitions like our national first place lunar rover. The project program is currently being expanded to emphasize entrepreneurial product-oriented projects, as well as those carried out in collaboration with industrial partners. We offer an education that prepares our students to become leaders of the engineering profession and one which empowers them to engage in a lifetime of learning and achievement.

In order to achieve these objectives, the Department of Mechanical and Environmental Engineering is engaged in a very ambitious effort to lead the discipline in new directions that will be critical to the success of 21st century technologies. While maintaining strong ties to stem areas of the discipline, we are developing completely new cross-cutting fields of science and engineering related to topics such as: microscale engineering and microelectrical-micromechanical systems; dynamics and controls and related areas of sensors, actuators and instrumentation; advanced composite materials and smart structures; computation, simulation and information science; advanced energy and transportation systems; and environmental monitoring, modeling and remediation.

Qualified students who wish to pursue advanced engineering education may enroll in the M.S. or Ph.D. programs. The department offers programs leading to the degrees of master of science and doctor of philosophy, with a specialization in any of the following major areas: dynamical systems and controls; thermo-fluid sciences; environmental and ocean engineering; solid mechanics and structures, thermo-fluid sciences and materials. The curricula for all of the major areas emphasize education in broad principles and fundamentals. At the same time, programs of study and research are flexible and tailored to accommodate the individual needs and interests of the students. Interdisciplinary approaches are stressed, and students are encouraged to cross over traditional boundaries into other departments.

The M.S. program is intended to extend and broaden the undergraduate background and/or equip practicing engineers with state-of-the-art knowledge in their field. The degree may be terminal or obtained on the way to the Ph.D. The Ph.D. program is designed to prepare students for careers in research and/or teaching in their area of specialization.

Mechanical engineering graduates at all levels are highly sought after by the automotive, aircraft, marine, defense, electronics, and materials manufacturing industries. A major in mechanical engineering may also serve as an appropriate part of the program of studies required for a California community college teaching credential. Students who wish to secure this credential should consult the designated advisor in the Graduate School of Education.

College wide undergraduate counseling is provided under the direction of the assistant to the dean for undergraduate studies. In addition, departmental advisors are assigned to all students in the freshman year. In the junior year an upper-division advisor assists the students in the selection of departmental elective courses and provides counseling to students on a variety of issues related to their academic experience. Individual faculty are also available for help in program planning and professional development. A faculty supervisor and the graduate advisor, in conjunction with a graduate studies committee, directs the program of studies for M.S. and Ph.D. candidates. Undergraduate students enrolled in other majors at UCSB who plan to change to a major in the Department of Mechanical and Environmental Engineering should obtain counseling from the assistant to the dean for undergraduate studies.

Laboratory Facilities

Well-equipped teaching and research laboratories can be used to conduct experimental and computational research in many areas.

1. Dynamical Systems Laboratory. This laboratory supports the theoretical studies undertaken in the engineering mechanics courses ME 163A-B. It provides practical experience in experimental techniques and electronic instrumentation associated with stress wave propagation, dynamic balancing, torsional oscillations, structural dynamic response, inertial navigation, and modal analysis of structures.

2. Control Systems Design Laboratory. This laboratory gives students experience analyzing, designing, and testing control systems. The major experiments performed are temperature control, speed and position control with DC motors, a digitally-controlled gripping device. Controls are built by the students using analog breadboards and microprocessors.

3. Thermosciences Laboratory. This laboratory is set up for undergraduate study of thermodynamics and heat transfer. Thermodynamics experiments include: a gas turbine, an engine dynamometer, two heat pumps and a facility for studying the thermodynamics of gasses. Heat transfer experiments include: an internal convection test stand, heat transfer of a heated cylinder, measurements of the conduction and convection by spheres of different materials, and a heat exchanger test stand. The laboratory is used by students enrolled in ME 151L, and students are encouraged to use these facilities for other projects.

4. Fluid Mechanics Laboratory. The major experiments in this laboratory include: a pipe flow experiment to demonstrate the practical aspects of friction factors in pipe flow and flow measurement techniques; a wind tunnel used to study lift, drag, and boundary layer phenomena; a compressible flow test stand; a water hammer test stand; a wave tank and wave generator for studying wave mechanics; a tilting flume for the study of open channel flow; and a variable pitch/speed pump to study turbomachinery. Apparatus is available for measuring important physical properties of fluids. This laboratory is used by students enrolled in ME 152L.

5. Materials Laboratory. This laboratory is designed to give students practical insight into the relationships among material properties, structures, processing, and environmental interactions. Experiments performed include: modeling atomic structures and their imperfections; phase equilibria and phase transformation kinetics; mechanical behavior; thermal processing of metals; sintering of ceramics; and corrosion of metals and degradation of plastics.

6. Microscale Thermal Processing Laboratory. Research conducted in the Microscale Thermal Processing Lab concerns the thermal management of small-scale systems in both fabrication and device operation. The lab research is conducted at the apex of where technology and science meet. The goal of the lab is to advance both fundamental understanding and processing technology in thermal science. Some current topics of research include: non-classical behavior of vaporization kinetics in pulsed laser deposition of thin film; developing laser based techniques for fabricating surface nanotexture for tribological enhancement of disk-drive storage media; and studying thermal asperities, which are disturbances in the computer-head readback signal arising from thermal fluctuations in the magnetoresistive element.

7. Environmental Engineering Laboratory. Research is being done on the transport and fate of sediments in surface waters, the transport and biochemical reactions of contaminants in surface waters and soils, and the interactions between contaminants in surface waters and the atmosphere. For the study of the transport and fate of sediments, available equipment includes an annular flume: a recently developed flume capable of measuring erosion rates of sediments

with depth, particle sizers, settling tubes for the measurement of settling speeds, and Couette and disk flocculators. The laboratory is well equipped for the use of radio-labeled chemicals; these are being used in chemical sorption transport and bioavailability studies. In all this work, there are close interactions between the experimental investigations and numerical analysis and modeling. For this purpose, the laboratory is well equipped with computers.

8. Materials Aging and Structural Reliability Laboratory. The aging of materials and ultimate potential failure of structures in hostile environments is a critical issue in all civil, industrial and energy supply technologies. This facility is aimed at developing better lifetime and performance predictions as well as superior materials for use under conditions of high temperatures and stresses, corrosive and reactive chemicals and intense radiation fields. The laboratory, and an associated network of facilities located both at UCSB and at various other research institutions across the country, provides the capability to expose materials to key parts of such extreme service environments and to measure the changes in their atomic arrangements, or microstructures, and mechanical properties following such treatments. The laboratory features new, state-of-the-art equipment for robotic testing of small and micro-sized mechanical specimens, tomographically imaging deformation and fracture processes and characterizing the micro and nano structures and chemistry of materials down to atomic scale resolution. These facilities are supported by a network of high speed workstations that are also used to carry out advanced computational modeling and simulation studies that are closely integrated with the experiments.

9. Controls Systems Laboratories. Laboratory facilities for research in internal combustion engine control, distributed control systems and the control of nano-scale actuators are equipped with state-of-the art test equipment.

10. Microscale and Turbulent Fluids Laboratory. The mission of this new laboratory is to develop and utilize optically-based instrumentation for analysis and design of micro-scale fluidic devices to examine the physics of turbulence near rigid boundaries. These devices are made possible by recent advances in micro- and nano-fabrication technologies. A variety of micro-fluidic experiments are planned, including: (1) the analysis of micron-size supersonic nozzles, (2) the development and analysis of micro-fluidic mixing chambers, and (3) the development and analysis of a biological cell manipulating chamber. Major equipment in this laboratory will include a pulsed Nd:YAG, an epi-fluorescent microscope, and a scientific-grade large format CCD camera.

11. Rheology Laboratory. This laboratory contains experiments dedicated to the fluid flow and heat transfer of non-Newtonian fluids. In particular, viscoelastic fluids are studied using flow visualization during extensional flow. Investigation of the viscous behavior of these fluids is also conducted, both experimentally and theoretically. Planned additions to the laboratory include comprehensive experimental installations dealing with convective heat transfer and fluid friction for drag-reducing polymer solutions.

12. Mechanical Test Laboratory. Experimental and theoretical materials science research is carried out in a variety of areas, including mechanical, thermal, magnetic, and electronic properties of materials. Extensive equipment is available for studying the metallography and the mechanical behavior of materials at high temperatures. A scanning electron microscope, microhardness testers, and X-ray diffraction equipment are also available.

13. Materials Processing Laboratory. This laboratory supports theoretical and experimental work on the generation and control of fine microstructures in metals and ceramics by advanced solidification technologies. Major facilities include equipment for electrohydrodynamic atomization, arc-spray metallizing, melt spinning, planar-flow casting, roll casting, and surface modification with high-energy beams, as well as conventional melting, casting, and heat treating. Additional facilities available for materials processing research include computers for process modeling, mechanical testing, and microstructural characterization equipment.

14. Ocean Engineering Laboratory. Research on environmental effects in the coastal zone and on the safety and reliability of marine structures is conducted in the Ocean Engineering Laboratory. Occupying 10,000 square feet in the Engineering Research Centers building, the laboratory's facilities include the 70 x 3 x 3-foot sediment transport flume. This tilting flume can separate and recirculate sediment for study of bottom sediment transport. It also includes a 170 x 12 x 8-foot towing tank equipped with a three-dimensional wave maker of novel design and a wind tunnel.

15. Computer Aided Design Laboratory. The laboratory makes modern computers and engineering software available to students. The lab contains 20 Pentium workstations and 12 UNIX workstations. All computers are networked to the lab's printers, plotters, and other peripherals. Engineering packages available include ProEngineer, ANSYS, Mechanica, MatLab, Mathematica and several other design and analysis packages. Several analysis and educational packages are also provided. The lab is used in conjunction with the department's CAD/CAM curriculum, and computers are available to the students for other class work.

16. Computer Aided Manufacturing Laboratory. This laboratory gives students practical experience with modern manufacturing techniques. The major equipment in the lab consists of computer controlled milling machines and a CNC lathe. Students learn to program and operate the tools, and to automatically translate CAD drawings on the PC into finished parts on the machines. Drawing files can be transferred directly from computers in the CAD laboratory to the machine in the shop. Equipment is available for the design and construction of simple controlled tools by the students.

17. Machine Shop. The student machine shop has eight milling machines, six lathes, welding, and sheet metal equipment for student use. The shop is supervised, and instruction on the use of the tools is available. Students are encouraged to use the shop for their own design projects.

18. Center for Risk Studies and Safety. Research in this lab focuses on turbulence and transport phenomena in multiphase systems, with particular reference to processes that are significant to environmental concerns, such as chemical and nuclear plant safety and waste management technologies. These experiments typically involve intense multiphase interactions under highly transient and rarely experienced settings. The primary experiments include: two hydrodynamic shock tubes for steam explosion research, apparatus for mixing hot particle clouds with coolants, an experiment to study natural convection at high Raleigh numbers, apparatus to study the critical heat flux in large-scale inverted geometry systems, and an experiment for the study of low gravity boiling and the effect of surfactants on critical heat flux. Instrumentation in the lab includes an infrared high-speed camera, a flash x-ray for quantitative radiography, high speed video and film cameras and high temperature melt-handling facilities. This work also involves large-scale numerical simulations, which are integrated toward achieving a significant practical contribution. Multi-scale numerical modeling is undertaken from the lattice Boltzman methods, to direct numerical simulations, to large-scale multifield models.

Undergraduate Program

Bachelor of Science—Mechanical Engineering

Note: Schedules should be planned to meet both General Education and major requirements. Detailed descriptions of these requirements are presented elsewhere in this catalog.

Preparation for the major

The following 104 units of lower-division courses are required: Engineering 3; Mechanical Engineering 6, 10, 14, 15, 16, 17; Chemistry 1A-B, 1AL-BL; Mathematics 3A-B-C, 5A-B-C; Physics 1, 2, 3, 4, and 3L, 4L; Writing 2E, 50E; and 23 units of General Education requirements.

Students who are not Mechanical Engineering majors will generally be permitted to take lower division mechanical engineering courses, subject to meeting prerequisites and grade-point average requirements, availability of space and consent of the instructor.

Upper-division major

The following 79 units are required: Materials 100B; Mechanical Engineering 104, 105, 140A, 151A-B-C, 152A-B, 153, 154, 155A, 156A-B-C, 163, and 18 units of departmental electives and 13 units of general education or free electives. Requirements total 183 units.

The mechanical engineering elective courses are organized into coherent tracks, allowing students to acquire more in-depth knowledge in one of several areas of specialization, such as those related to: the environment; design and

manufacturing; thermal and fluid sciences; structures, mechanics, and materials; and dynamics and controls. The department electives program aims to be flexible. Hence, students may also choose a general mechanical engineering track or one tailored to their own special interests. All students are required to select a track, and all tracks may include additional required courses. A student's specific course sequence is subject to the approval of the department advisor. Track options are posted in the student's junior year.

Courses required for the pre-major or major, inside or outside of the Department of Mechanical and Environmental Engineering, cannot be taken for the passed/not passed grading option. They must be taken for letter grades.

Honors Program

Students with a minimum grade-point average of 3.4 in the major may apply, in the spring quarter of their junior year, for the honors program. To qualify for honors, students must carry out a specific project under the direct supervision of a faculty member or complete two graduate courses with a grade-point average of 3.3 or better.

Pi Tau Sigma. Pi Tau Sigma is the national mechanical engineering honor society. Membership is based on academic achievement. To be eligible for membership, juniors must rank in the top quarter of their class and seniors in the top third of their class. Students who are qualified for membership will be contacted by representatives of Pi Tau Sigma.

Other organizations.

Tau Beta Pi (national engineering honor society)
American Society of Mechanical Engineers (ASME)
Society of Automotive Engineers (SAE)
Society of Women Engineers (SWE)
Los Ingenieros (Mexican-American Engineering Society/Society of Hispanic Professional Engineers)
National Society of Black Engineers

Students interested in these organizations may contact the Mechanical Engineering Department office or the Undergraduate Office in the College of Engineering.

Research Opportunities

Upper-division undergraduates have opportunities to work in a research environment with faculty members who are conducting current research in the various fields of mechanical engineering. Students interested in pursuing undergraduate research projects should contact individual faculty members in the department.

Graduate Program

In addition to departmental requirements, program applicants and candidates for graduate degrees must fulfill University requirements described in the chapter "Graduate Education at UCSB."

Specific details about departmental degree requirements are found in the departmental graduate guide which students receive upon admission. Departmental requirements stated in the guide are in addition to the minimum requirements stated below and in the chapter "Graduate Education at UCSB" in this catalog.

Master of Science—Mechanical Engineering

Admission

In addition to Graduate Division requirements for admission to graduate status, the department requires a bachelor's degree or its equivalent from an accredited institution. Applicants with undergraduate preparation that is deemed inadequate may be required to take additional courses.

Degree Requirements

Students must choose a major field from among five stem areas presently offered by the department:

- Computational science and engineering
- Dynamic systems, controls, and robotics
- Environmental and ocean engineering
- Solid mechanics, structures and materials
- Thermofluid sciences

Significant flexibility exists in the requirements for each of these stem areas, and students are encouraged to gain expertise in modern cross cutting fields like: manufacturing; reliability engineering; microscale systems; design; aerostructures; composite technology; energy and transportation; environmental sensing; integrated sensors, actuators and control systems; computational simulation and others.

Two plans of study are offered, each requiring successful completion of 42 quarter-units of credit. Plan 1 is a combination of coursework and research, culminating in the preparation of a thesis; Plan 2 involves coursework and the completion of a written project.

Plan 1 (thesis). The department requires 42 units with thesis: 18 units of approved coursework in the major field, 9 units of approved elective courses in science and engineering, 3 units of graduate seminar, 12 units of ME 598, and completion of a thesis. No more than 9 units may be at the 100 level. All students must attend ME 200 each quarter in residence until the MS Degree requirements are completed.

Plan 2 (research project). The department requires 42 units without thesis: 18 units of approved coursework in the major field, 18 units of approved elective courses in science and engineering, 3 units of graduate seminar, and completion of a 3 unit project dealing with a topic in the major field. No more than 12 units may be at the 100 level. All students must attend ME 200 each quarter in residence until the MS Degree requirements are completed.

Doctor of Philosophy—Mechanical Engineering

The emphasis in the Ph.D. program is on the ability to correlate knowledge in the pursuit of original research.

Admission

Applicants to the Ph.D. program must meet Graduate Division requirements for admission.

Degree Requirements

During the first year of study students are required to develop a formal study plan which must be approved by the student's faculty advisor and the department graduate advisor. In this plan, students select a major area of study from among the five fields offered by the department (see Master's Requirements for a listing of these areas). Significant flexibility exists in the requirements for each of these stem areas, and students are encouraged to gain expertise in modern cross cutting fields like: manufacturing; reliability engineering; microscale systems; design; aerostructures; composite technology; energy and transportation; environmental sensing; integrated sensors, actuators and control systems; computational simulation and others. All students in the Ph.D. program are required to pass a departmental oral screening exam. Students must take this examination within 15 months of being admitted to the Ph.D. program or within 6 months of entering with a Master's degree. Normally, a student without a Master's degree will have taken 15 units of approved graduate coursework prior to the screening examination. In the oral screening examination, students will be tested in their major area, as well as questioned in broader areas of mechanical and environmental engineering.

After passing the oral screening exam, students select a Ph.D. dissertation committee with the approval of their advisor. As part of the Ph.D. qualifying examination, each student must present a dissertation proposal to the Ph.D. committee for approval. Upon successful completion of this examination, students advance to candidacy.

Candidates must complete their dissertation and pass a thesis defense consisting of presenting a seminar talk and answering questions posed by their dissertation committee.

In addition to these requirements, Ph.D. students must complete a minimum of 36 quarter units of coursework: 18 units in key courses in the major field; 9 units in approved mechanical and environmental engineering courses; 9 units in approved science and engineering. Normally 27 units of credit is given to students who enter with an approved M.S. degree. The department requires that students maintain a minimum grade point average of 3.5. Students must attend ME 200 each quarter until advanced to candidacy.

Mechanical and Environmental Engineering Courses

LOWER DIVISION

Engineering 3. Introduction to C Programming
(3) STAFF
Prerequisites: open to College of Engineering freshmen only, except computer science and pre-computer science majors.

Introduction to computers: word processing, spreadsheets, and C programming language. Basic

programming concepts, algorithms, data structures, debugging, and program design.

Engineering 5A. Computations in Elementary Differential Equations and Linear Algebra
(1) STAFF
Prerequisites: Physics 1; Mathematics 5A (may be taken concurrently); open to College of Engineering majors only.

Ordinary differential equations, initial value problems, and linear algebra explored in an engineering context with the use of modern computer math tools. (F)

Engineering 5B. Computations in Vector Calculus
(1) STAFF
Prerequisites: Physics 1; Mathematics 5B (may be taken concurrently); open to College of Engineering majors only.

Vector differential calculus and vector integral calculus explored in an engineering context with the use of modern computer math tools. (W)

Engineering 5C. Computations in Ordinary and Partial Differential Equations
(1) STAFF
Prerequisites: Physics 1; Mathematics 5C (may be taken concurrently); open to College of Engineering majors only.

Nonlinear systems, Fourier analysis, boundary value problems, and partial differential equations explored in an engineering context with the use of modern math tools. (S)

6. Basic Electrical and Electronic Circuits
(3) STAFF
Prerequisites: Physics 2, and Mathematics 3C; open to ME majors only.

Not open for credit to students who have completed ECE 2A or 2B, or ECE 6A or 6B.

Introduction to basic electrical circuits and electronics. Includes Kirchoff's laws, phasor analysis, power calculations, circuit elements, transistor circuits and digital circuits.

10. Engineering Graphics: Sketching, CAD, and Conceptual Design
(3) STAFF
Prerequisite: ME majors only.

Introduction to engineering graphics, CAD, and freehand sketching. Develop CAD proficiency using Pro/Engineer. Graphical presentation of designs: views, sections, dimensioning, and tolerancing.

11A. Introductory Concepts in Mechanical & Environmental Engineering I
(1) STAFF
Prerequisites: Physics 1 and 2; Mathematics 3A-B-C.

Survey of mechanical and environmental engineering applications. Formulation and solution of simple representative problems. Lectures by mechanical engineering faculty and practicing engineers.

11B. Introductory Concepts in Mechanical & Environmental Engineering II
(1) STAFF
Prerequisites: Physics 1 and 2; Mathematics 3A-B-C; and ME 11A.

Continuation of ME 11A. Key underpinning conceptual principles of engineering. Simple team design projects to illustrate basic engineering design principles. Application of ME CAD and computational tools.

12S. Introduction to Machine Shop
(1) STAFF
Prerequisite: mechanical engineering majors only.

Not open for credit to students who have completed Mechanical Engineering 156S.

Use of the lathe, mill, and other machine shop tools; precision measurement techniques. Machine shop safety. Hands-on experience working on projects.

14. Statics
(4) STAFF
Prerequisites: Physics 1 and Mathematics 3C; open to ME majors only.

Free-body principle and Newton's third law, general force systems, distributed forces, internal forces, numerical and graphical solutions to three-dimensional problems in statics.

15. Strength of Materials
(4) STAFF
Prerequisites: Physics 2 and ME 14; open to college of engineering students only.

Hooke's law and properties of structural materials. Methods of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure and combined loading. Design beyond the elastic limit.

16. Engineering Mechanics
(3) STAFF
Prerequisites: Physics 2 and ME 14; concurrent enrollment in Mathematics 5C; open to ME and ECE majors only.

Not open for credit to students who have completed ME 163A.

Kinematics and dynamics for two- and three-dimensional motion. Newton's laws, momentum, work, energy, and power. Applications to mechanisms, machine elements, dynamic balancing, and gyroscopic motion.

17. Mathematics of Engineering
(3) STAFF
Prerequisites: Mathematics 5C (may be taken concurrently); open to ME majors only.

Engineering applications of mathematical methods. Topics include ordinary differential equations, linear algebra, calculus, Fourier analysis, and partial differential equations.

9S. Introduction to Mechanical Engineering
(1-4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 6 units.

Participation in projects in the laboratory or machine shop. Projects may be student- or faculty-originated depending upon student interest and consent of faculty member.

97. Mechanical Engineering Design Projects
(1-4) STAFF
Prerequisite: consent of instructor.

May be repeated for maximum of 12 units, variable hours.

Course offers students opportunity to work on established departmental design projects. P/NP grading, does not satisfy technical elective requirement.

UPPER DIVISION

Engineering 100. Engineering Economic Analysis
(3) STAFF
Prerequisite: upper-division standing in engineering.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering.

Engineering 101. Ethics in Engineering
(3) STAFF
Prerequisite: upper-division standing in engineering.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced.

Engineering 103. Advanced Engineering Writing
(4) STAFF
Prerequisites: Engineering 2A-B-C or Writing 1 or 1LK or 2 or 2LK or 50 or 50LK; and upper-division standing.

Analysis and practice of the forms of technical writing—reports, proposals, journal papers, abstracts, and presentations—that engineers and scientists will encounter in professional careers. Attention to research methods, document design, effective graphics, technical style, and electronic document preparation.

100A. Professional Seminar
(1) STAFF
Prerequisite: undergraduate standing.

May be repeated for up to three units. May not be used as a departmental elective.

A series of weekly lectures given by university staff and outside experts in the fields of fluid mechanics, thermal science, and ocean engineering.

100B. Professional Seminar
(1) STAFF
Prerequisite: undergraduate standing.

May be repeated for up to three units. May not be used as a departmental elective.

A series of weekly lectures given by university staff and outside experts in the fields of robotics, solid mechanics, dynamics, and material science.

104. Sensors, Actuators and Computer Interfacing
(3) STAFF
Prerequisites: ME 6; open to ME majors only.

Basic introduction to sensors, actuators and computer interfacing and control. Transducers and measurement devices, actuators and electromagnetic devices, interfacing. Digital electronics, A/D and D/A conversion. Signal conditioning, filtering, noise, and shielding. Practical skills are developed in lab exercises. Student built computer-controlled machines demonstrated at the end of the quarter. (first offered 2001-2002)

10S. Mechanical Engineering Laboratory
(3) STAFF
Prerequisites: ME 151A-B, 152A-B, 163, and Materials 100B; open to ME majors only.

Introduction to fundamental laboratory measurement techniques and report writing skills. Experiments from thermosciences, fluid mechanics, mechanics, materials science and environmental engineering. Introduction to modern data acquisition and analysis techniques. (first offered 2001-2002)

112. Energy Conversion
(3) STAFF
Prerequisites: ME 151C and ME 152A.

Overview of energy usage and production from prehistory to present times (technical, environmental, and societal issues). Technical analyses of the modern means of energy production (fossil, nuclear, hydro, wind, solar, geothermal, biomass, etc.): operating principles, hardware, engineering issues, environmental impact, etc.

113. Desalination
(3) STAFF
Prerequisites: ME 151A and ME 151B (may be taken concurrently).

Chemical and physical properties of ocean water, geothermal brine, and groundwater. Fundamentals of theories of distillation, freezing, reverse osmosis, electrodialysis, and other demineralization techniques. Design and application of desalination systems. Energy sources for desalination. Efficiency and economy of desalination plants.

114. Water Supply and Pollution Control
(3) STAFF
Prerequisite: ME 152A.

Water supply and quality requirements for domestic, industrial, agricultural, and recreational uses. Properties of natural surface and groundwaters. Pollutants in surface and groundwaters. Transport and fates of waterborne pollutants. Water and sewage treatment processes. Waste water reclamation. Water quality management in ground and surface water environments.

11S. Introduction to Air Pollution Principles
(3) STAFF
Prerequisites: ME 151A and 152A.

Adverse effects, the atmosphere, macroscale motion, meso- and micrometeorology, effluent

dispersion, sulfurous smog, photochemical smog, stationary sources and their control, emission formations in gasoline-powered engines, effects of design and operating variables on gasoline engine exhaust emissions, and present and future emission control systems for gasoline engines. (May not be offered each year.)

119. Introduction to Coastal Engineering
(3) STAFF

Prerequisite: ME 152A.

Quantitative description of tides and waves, especially in the coastal zone. Refraction, reflection, and diffraction of waves, harbor resonance, and design, interaction of structures and waves, sediment and contaminant transport.

124. Advanced Topics in Transport Phenomena/Safety
(3) BANERJEE

Prerequisites: Chemical Engineering 120A-B-C or ME 151A-B; and, ME 152A; and consent of instructor.

Same course as Chemical Engineering 124.

Hazard identification and assessments, runaway reactions, emergency relief. Plant accidents and safety issues. Dispersion and consequences of releases.

125A-Z. Special Topics in Mechanical Engineering
(1-4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

Individual courses each concentrating on one area in the following subjects: applied mechanics, CAD/CAM, controls, design, environmental engineering, fluid mechanics, materials science, mechanics of solids and structures, ocean and coastal engineering, robotics, theoretical mechanics, thermal sciences, and recent developments in mechanical engineering.

126. Introduction to Environmental Engineering and Science
(3) LICK

Prerequisites: ME 151A and 152A.

An introduction to environmental problems and their solutions. We will discuss surface water, ground water, and air pollution as well as risk analysis and the treatment of hazardous wastes.

134. Advanced Thermal Science
(3) STAFF

Prerequisite: ME 151C.

This class will address advanced topics in fluid mechanics, heat transfer, and thermodynamics. Topics of interest may include combustion, phase change, experimental techniques, materials processing, manufacturing, engines, HVAC, non-Newtonian fluids, etc.

135. Numerical Heat Transfer
(3) STAFF

Prerequisite: ME 151C.

This class will introduce basic numerical techniques such as finite differences or finite elements, and their application to flow and heat transfer problems. Industrial software packages may also be studied and used in hands-on projects.

136. Introduction to Multiphase Flows
(3) THEOFANOUS

Prerequisites: Chemical Engineering 120A-B-C; or, ME 151C and 152A.

Same course as Chemical Engineering 136.

Development from basic concepts and techniques of fluid mechanics and heat transfer, to local behavior in multiphase flows. Key multiphase phenomena, related physics. Extension of local conservation principles to usable formulations in multiphase flows. Modelling approaches. Practical examples.

138. Risk Assessment and Management
(3) THEOFANOUS

Prerequisites: ME 151B or 152A or Chemical Engineering 120A-B-C; and consent of instructor.

Same course as Chemical Engineering 138.

Conceptual foundations of risk and its utility for decision making. Determinism, statistical inference, and uncertainty. Formulation of safety goals and approaches to risk management. Generalized methodology and tools for assessing risks in the industrial, ecological, and public health context.

140A. Numerical Analysis in Engineering
(3) STAFF

Prerequisites: Mathematics 5B; and, Engineering 1A-B-C or 2A-B-C or Engineering 3; open to ME majors only.

Building upon calculus and computer programming, the course covers basic numerical methods, including linear and nonlinear algebraic equations, interpolation and approximation, ordinary differential equations, numerical integration and differentiation, finite element and perturbation. Weekly assignments involve both pencil-and-paper and computer work.

140B. Theoretical Analysis in Mechanical Engineering
(3) STAFF

Prerequisites: ME 140A; open to ME and ECE majors only.

Introduction to the mathematical modeling of engineering problems and their methods of solution. Emphasis on the formulation of problems in terms of partial differential equations. Solutions by means of numerical, perturbation, and analytic methods.

150. Introduction to Design
(1) STAFF

Prerequisites: upper-division standing; open to ME majors only.

Introduction to the design process. Generating ideas; brainstorming, analysis of alternatives, trade studies and special topics. Design project in preparation for ME 197.

151A. Thermosciences
(3) STAFF

Prerequisites: Mathematics 5C, Physics 2, and ME 14; open to ME and ECE majors only.

Discussion of basic laws and concepts of thermodynamics such as pressure, temperature, energy, and entropy; consideration of their applications to various systems. Consideration given to the molecular structure and physical properties of the solid, liquid, and gaseous states. Introduction to vapor power cycles.

151B. Thermosciences
(3) STAFF

Prerequisite: ME 151A; open to ME majors only.

Application of basic thermodynamic principles and laws to energy conversion systems, gas mixtures, statistical thermodynamics, irreversible thermodynamics, conduction heat transfer.

151C. Thermosciences
(3) STAFF

Prerequisites: ME 151B and 152A; open to ME majors only.

The study of the fundamentals of heat transfer using the phenomena of conduction, radiation, and convection, application and analysis of steady state, transient, and combined mode problems.

151L. Thermoscience Laboratory
(1) STAFF

Prerequisites: concurrent enrollment in ME 151C; open to ME majors only.

Experiments in heat transfer and thermodynamics. Characteristics of heat exchangers, and the performance of vapor and gas cycles will be determined. Flow over a heated cylinder and expansion and compression of gases will be studied. Heat transfer by conduction and radiation will be investigated. Introduction to measuring techniques for the determination of mass and energy flow rates, pressure, temperature, and heat transfer coefficients.

152A. Fluid Mechanics
(3) STAFF

Prerequisites: Physics 2; Mathematics 5C; ME 14 and 151A; and, ME 16 or 163A; open to ME and ECE majors only.

Introduction to the fundamental concepts in fluid mechanics and basic fluid properties. Basic equations of fluid flow. Dimensional analysis and similitude. Hydrodynamics.

152B. Fluid Mechanics
(3) STAFF

Prerequisite: ME 152A; open to ME majors only.

Incompressible viscous flow. Boundary-layer theory. Introductory considerations for one-dimensional compressible flow.

152L. Fluid Mechanics Laboratory
(1) STAFF

Prerequisite: ME 152A.

Use of laboratory models to simulate engineering and oceanic scale phenomena. Wind tunnel experiments to measure and analyze fluid motions, lift, and drag on scale models. Water channel experiments to measure and analyze sediment transport, waves, and turbulence. Fluids in rotating machinery and geophysical systems.

153. Introduction to Mechanical Engineering Design
(3) STAFF

Prerequisites: ME 10; and ME 15 or 165; open to ME majors only.

Design of systems using mechanics, stress analysis and finite elements. Statistical problems in manufacturing and reliability. Ethics. One paper design project plus the ASME student design project.

154. Design and Analysis of Structures
(3) STAFF

Prerequisites: ME 14, 15, and 16; open to ME majors only.

Structures and structural analysis. Applied finite element analysis, introduction to the theory of FEA, matrix methods, shells and plates and other structural elements. (first offered 2001-2002)

155A. Control Systems Design
(3) STAFF

Prerequisite: open to ME majors only.

Recommended preparation: ME 140A.

Study of linear feedback systems, transfer functions, stability, root locus, Nyquist diagrams, frequency response, and state space techniques. Design and synthesis of control systems.

155AL. Control Systems Design Laboratory
(1) STAFF

Prerequisites: concurrent enrollment in ME 155A; open to ME majors only.

Design of feedback control system; feedback compensation to meet specified design criteria.

156A. Engineering Materials and Design Concepts
(4) STAFF

Prerequisites: ME 153 and 154, and Materials 100B; open to ME majors only.

Selection of engineering materials, stress and strain considerations in design of machine elements. Hertz stress and fatigue strength requirements. Use of Ashby charts for material selection. Design projects will be used to reinforce lecture topics. Preparation of detailed shop drawings.

156B. Mechanical Engineering Design
(4) STAFF

Prerequisites: ME 156A; open to ME majors only.

Design of specific machine elements: springs, bearings, drive train components, fasteners, etc. Design considerations for manufacturing: metal fabrication, composite structures, molding, CNC, weldments, adhesive bonding. Topics covered will be applied in several practical projects culminating in completion of formal design.

156C. Selected Topics in Design
(4) STAFF

Prerequisites: ME 156A-B; open to ME majors only.

Continuation of ME 156B topics. Lectures by practicing professional design engineers on current topics in machine design, solution of design problems posed by guests. Application of design principles to student hardware design projects. Student design presentations.

156D. Thermal Systems Design
(4) STAFF

Prerequisite: senior standing.

Design course in which students analyze and design thermal systems such as desalination plants,

geothermal power plants, air liquification plants as well as system components such as heat exchangers, regenerators, etc. Will build on concepts introduced in ME 156A-B, ME 151A-B-C, and ME 152A.

156F. Electromechanical System Design
(4) STAFF

Prerequisite: ME 163A.

Laboratory based course in which students design and build simple machines controlled by microprocessors. Emphasis will be placed on interfacing sensors and actuators to the microprocessor and programming control algorithms. Will build on concepts introduced in ME 163 and will serve as motivation for advanced controls courses.

158. Computer Aided Design and Manufacturing
(3) STAFF

Prerequisites: ME 10; open to ME majors only.

Advanced topics in computer aided design and an introduction to computer aided manufacturing. Topics vary, but include surfaces, mold design, design for manufacturing, sheet metal design, advanced assemblies, automating the design process, and interfacing design software with other programs such as spreadsheets and finite element analysis. Manufacturing topics include programming the CNC, lathe and mill, and programming for stereolithography. Computer and machine shop labs.

159. Principles of Controlled Thermonuclear Reactors
(3) STAFF

Prerequisites: senior standing in engineering or physics.

Not open for credit to students who have completed Nuclear Engineering 160.

Fundamentals of controlled thermonuclear fusion reactor technology. Fusion reactions. Elementary plasma theory. Heating and confinement of thermonuclear plasmas. Vacuum and magnet technology. Conceptual designs of reactors, energy conversion methods, blanket neutronics and tritium breeding. Materials problems.

160. Gas Dynamics and Propulsion
(3) STAFF

Prerequisites: ME 151B and 152A.

Resume of fundamentals of gas dynamics, thermodynamics, and combustion. Subsonic and supersonic two-dimensional flows. Method of characteristics. Normal and oblique shocks. Analysis of compressible flow through ducts, nozzles, and in gas turbines, rockets, and ram jets.

162. Introduction to Elasticity
(3) STAFF

Prerequisites: ME 140A or 165 or 15.

Equations of equilibrium, compatibility, and boundary conditions. Solutions of two-dimensional problems in rectangular and polar coordinates. Eigen-solutions for the wedge and Williams' solution for cracks. Stress intensity factors. Extension, torsion and bending. Energy theorems. Introduction to wave propagation in elastic solids. (May not be offered each year.)

163. Engineering Mechanics: Vibrations
(3) STAFF

Prerequisites: ME 140A and 16; open to ME and ECE majors only.

Not open for credit to students who have completed ME 163B.

Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates and Lagrange's equations, applications to systems. Basic feedback systems and controlled dynamic behavior. (first offered 2001-2002)

163B. Engineering Mechanics: Vibrations
(3) STAFF

Prerequisites: ME 140A and 163A; open to ME majors only.

Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates and Lagrange's equations, applications to systems with several degrees of freedom and to continuous systems.

163C. Nonlinear Phenomena
(4) MEZIC

Prerequisites: Physics 105A or ME 163A or 163B; or, upper-division standing in ECE.

Same course as ECE 183 and Physics 106.

An introduction to nonlinear phenomena. Flows and bifurcations in one and two dimensions, chaos, fractals, strange attractors. Applications to physics, engineering, chemistry, and biology.

163L. Engineering Mechanics Laboratory
(1) STAFF

Prerequisite: ME 163B (may be taken concurrently); open to ME majors only.

Experimental and computer design laboratory which applies the basic principles of mechanics to vibrations, orbital dynamics, structural response, wave propagation. Includes introduction to instrumentation.

164. Environmental Degradation of Materials
(3) STAFF

Prerequisite: Materials 100B.

Effects of service environment on properties of materials including oxidation, corrosion, thermal aging, radiation damage. Effects of property degradation on service life.

165. Strength of Materials
(3) STAFF

Prerequisites: Physics 1, ME 14, and Mathematics 5C; open to engineering students only.

Not open for credit to students who have completed ME 15.

Hooke's law and properties of structural materials. Methods of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure and combined loading. Design beyond the elastic limit.

166. Advanced Strength of Materials
(3) STAFF

Prerequisites: ME 140A or 165 or 15.

Analysis of statically determinate and indeterminate systems using integration, area moment, and energy methods. Beams on elastic foundations, curved beams, stress concentrations, fatigue, and theories of failure for ductile and brittle materials. Photoelasticity and other experimental techniques are covered, as well as methods of interpreting in-service failures.

167. Structural Analysis
(3) STAFF

Prerequisites: ME 15 or 165; and ME 140A.

Recommended preparation: ME 166.

Computer-oriented course for the analysis of structural systems composed of bars and beams using matrix manipulation. Formation of stiffness and flexibility matrices. Matrix formulation of the equations of equilibrium and compatibility. Displacement (stiffness) and force (flexibility) methods.

168. Applied Finite Element Analysis
(3) STAFF

Prerequisites: ME 15 or 165; and ME 140A.

Recommended preparation: ME 167.

Introductory course in use of finite elements to solve analytical and design problems. Topics include: theoretical basics, finite element discretization (nodes, elements); interpolating polynomials; applications to elasticity problems, heat transfer/irrotational fluid flow; isoparametric formulation, practical considerations in modeling, interpretation of results using FEM codes.

169. Nonlinear Phenomena
(4) MEZIC

Prerequisites: Physics 105A or ME 163; or upper-division standing in ECE.

Same course as ECE 183 and Physics 106. Not open for credit to students who have completed ME 163C.

An introduction to nonlinear phenomena. Flows and bifurcation in one and two dimensions, chaos, fractals, strange attractors. Applications to physics, engineering, chemistry, and biology. (first offered 2001-2002)

170A. Introduction to Robotics: Robot Mechanics
(4) STAFF

Same course as ECE 181A.

Recommended preparation: ME 16.

Overview of robot kinematics and dynamics. Structure and operation of industrial robots. Robot performance: workspace, velocity, precision, payload. Comparative discussion of robot mechanical designs. Actuators. Robot coordinate systems. Kinematics of position. Dynamics of manipulators.

170B. Introduction to Robotics: Robotic Sensing
(4) STAFF

Prerequisite: ECE 181A or ME 170A.

Recommended preparation: ECE 178.

Overview of robot sensing technology. Mechanical, acoustic, thermal, electric, magnetic, optical, and chemical sensors. Characteristics of sensor devices. Emphasis on visual sensors. Description, recognition, and understanding of images. Design emphasis on integrating different types of sensors on one robot or robot system.

170C. Introduction to Robotics: Robot Control
(4) STAFF

Prerequisites: ECE 6A-B; or, ME 6 and 104.

Overview of robot control technology from open-loop manipulators and sensing systems, to single-joint servovalves and servomotors, to integrated adaptive force and position control using feedback from machine vision and touch sensing systems. Design emphasis on accurate tracking accomplished with minimal algorithm complexity.

173. Control Systems Synthesis
(3) STAFF

Prerequisite: ME 155A.

Not open for credit to students who have completed ECE 147A.

Pole-placement, observer design, observer-based compensation, frequency and time-domain techniques, internal model principle, linear quadratic regulators, modeling uncertainty in signals and systems, robust stability and performance, synthesis for robustness.

180L. Materials Laboratory
(1) STAFF

Prerequisite: Materials 100B.

Experiments illustrating the fundamentals of structure and properties of materials, as well as the relationships between properties, structure, processing, and environmental interactions. Spatial arrays and imperfections, phase equilibria and structural transformations, mechanical behavior, corrosion, and effects of processing on structure.

185. Materials in Engineering
(3) LEVI

Prerequisites: Materials 100B and 100C.

Same course as Materials 185.

Introduction to the main families of materials and the principles behind their development, selection, and behavior. Discussion of the generic properties of metals, ceramics, polymers, and composites more relevant to structural applications. Emphasis on the relationship of properties to structure and processing.

186. Manufacturing and Materials
(3) LEVI

Prerequisites: ME 151A-C, 165; and Materials 100B.

Same course as Materials 186.

Introduction to the fundamentals of common manufacturing processes and their interplay with the structure and properties of materials as they are transformed into products. Emphasis on process understanding and the key physical concepts and basic mathematical relationships involved in each of the processes discussed.

193. Internship in Industry
(3) STAFF

Prerequisite: consent of instructor and prior departmental approval needed.

Cannot be used as a departmental elective. May be repeated to a maximum of 6 units.

Special projects for selected students offered in

conjunction with industrial practice in selected industrial and research firms, under direct faculty supervision.

195. Directed Research
(3) STAFF
Prerequisite: consent of instructor.

This course cannot be used as a departmental elective and may not be repeated beyond a total of 6 units.

Special research projects open to selected students. Research projects are to be arranged by student and supervising faculty. The course is designed to give qualified undergraduates early experience in research.

196. Undergraduate Research
(2-4) STAFF
Prerequisites: upper-division standing; and consent of the instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. May be repeated for up to 12 units. Not more than 4 units may be applied to departmental electives.

Research opportunities for undergraduate students. Students will be expected to give regular oral presentations, actively participate in a weekly seminar, and prepare at least one written report on their research.

197. Independent Projects in Mechanical Engineering Design
(1-4) STAFF
Prerequisite: consent of instructor.

May be repeated for a maximum of 12 units, variable hours. No more than 4 units may be used as departmental electives.

Special projects in design engineering. Course offers motivated students opportunity to synthesize academic skills by designing and building new machines.

199. Independent Studies in Mechanical Engineering
(1-4) STAFF
Prerequisites: consent of instructor; upper-division standing; completion of two upper-division courses in mechanical and environmental engineering.

Students must have a minimum of 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 4 units may be used as departmental electives. May be repeated to 12 units.

Directed individual study.

GRADUATE COURSES

200A. Professional Seminar
(1) STAFF
Prerequisite: graduate standing.

A series of weekly lectures given by university staff and outside experts in the field of fluid mechanics, thermal science, and ocean engineering.

200B. Professional Seminar
(1) STAFF
Prerequisite: graduate standing.

A series of weekly lectures given by university staff and outside experts in the field of robotics, solid mechanics, dynamics, and materials science.

200P. Master of Science Project
(3) STAFF
Prerequisite: graduate standing.

A ten-week research project on an advanced topic in Mechanical Engineering.

201. Advanced Dynamics
(3) STAFF
Prerequisites: ME 16, 163, and 163L.

Vectorial dynamics, conservation theorems, particle and rigid body motion; analytical dynamics, Lagrange equations, rigid body dynamics, normal modes of oscillation.

202. Advanced Dynamics
(3) STAFF
Prerequisite: ME 201.

Variational methods, Hamiltonian mechanics, Hamilton-Jacobi equation, Liouville's theorem, Liapunov stability, qualitative theory of dynamical systems.

203. Nonlinear Mechanics
(3) STAFF
Prerequisite: ME 201.

Phase plane analysis, criteria of stability, study of Van der Pol, Duffing, Mathieu equations, Poincare-Bendixson theorem, method of Krylov-Bogoliuboff, equivalent linearization, perturbation methods.

205. Perturbation Methods in Applied Mathematics
(3) STAFF
Prerequisite: ME 140A.

An introduction to perturbation (approximation) methods used in applied mathematics and engineering. Specific topics will include regular and singular perturbations which depend on a small parameter or coordinate, approximate and asymptotic solutions of ordinary and partial differential equations, asymptotic evaluation of integrals, method of matched asymptotic expansions, N-timing and multiple-scaling methods, and coordinate stretching methods.

206. Simulation of Dynamical Systems
(3) STAFF
Prerequisite: ME 201.

Kinematics and dynamics of mechanisms; joint constraints; numerical methods; constrained systems; stochastic processes; mappings; chaotic response of structures; Monte Carlo methods.

208. Sediment Transport
(3) STAFF
Prerequisite: ME 220A.

The transport and fate of fine-grained sediments and contaminants in aquatic systems. Includes resuspension, flocculation, settling speeds and numerical modeling of hydrodynamics, sediment and contaminant transport in rivers, lakes, estuaries, and near-shore oceanic areas. Risk analysis.

209. Contaminant Transport and Fate
(3) LICK
Prerequisite: consent of instructor.

Transport and fate of contaminants in surface waters, ground waters, and soils. Includes physical transport and transformations due to chemical and biological processes. Applications to water pollution in rivers, lakes, oceans, aquifers, and contaminated soils.

210A. Matrix Analysis and Computation
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211A, ECE 210A, Mathematics 206A, and Chemical Engineering 211A.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Graduate level-matrix theory with introduction to matrix computations. SVD's, pseudoinverses, variational characterization of eigenvalues, perturbation theory, direct and iterative methods for matrix computations.

210B. Numerical Simulation
(4) PETZOLD
Prerequisite: consent of instructor.

Same course as Computer Science 211B, ECE 210B, Mathematics 206B, and Chemical Engineering 211B.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Linear multistep methods and Runge-Kutta methods for ordinary differential equations: stability, order and convergence. Stiffness. Differential algebraic equations. Numerical solution of boundary value problems.

210C. Numerical Solution of Partial Differential Equations—Finite Difference Methods
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211C, ECE 210C, Mathematics 206C, and Chemical Engineering 211C.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Finite difference methods for hyperbolic, parabolic and elliptic PDEs, with application to problems in science and engineering. Convergence, consistency, order and stability of finite difference methods. Dissipation and dispersion. Finite volume methods. Software design and adaptivity.

210D. Numerical Solution of Partial Differential Equations—Finite Element Methods
(4) STAF
Prerequisite: consent of instructor.

Same course as Computer Science 211D, ECE 210D, Mathematics 206D, and Chemical Engineering 211D.

Recommended preparation: Students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Weighted residual and finite element methods for the solution of hyperbolic, parabolic and elliptical partial differential equations, with application to problems in science and engineering. Error estimates. Standard and discontinuous Galerkin methods.

212. Risk Assessment and Management
(3) THEOFANOUS
Prerequisites: consent of instructor.

Same course as Chemical Engineering 212

Conceptual foundations of risk and its utility for decision making. Determinism, statistical inference, and uncertainty. Formulation of safety goals and approaches to risk management. Generalized methodology and tools for assessing risks in the industrial, ecological, and public health context.

218. Introduction to Multiphase Flows
(3) THEOFANOUS
Prerequisite: consent of instructor.

Same course as Chemical Engineering 218.

Development from basic concepts and techniques of fluid mechanics and heat transfer, to local behavior in multiphase flows. Key multiphase phenomena, related physics. Extension of local conservation principles to usable formulations in multiphase flows. Modelling approaches. Practical examples. Computer simulations.

219. Continuum Mechanics
(3) STAFF
Prerequisites: ME 152A-B.

Same course as Materials 207.

Matrices and tensors, stress deformation and flow, compatibility conditions, constitutive equations, field equations and boundary conditions in fluids and solids, applications in solid and fluid mechanics.

220A-B. Fundamentals of Fluid Mechanics
(3-3) STAFF
Prerequisites: ME 151A-B and 152A-B.

Introductory course in fluid mechanics. Basic equations of motion (continuity, momentum, energy, vorticity), coordinate transformations, "potential" flow, thin airfoil theory, conformal mapping, vortex dynamics, boundary layers, stability theory, laminar/turbulent transition, turbulence. Inviscid/viscid, irrotational/rotational, incompressible/compressible flow examples.

221. Advanced Viscous Flow
(3) STAFF
Prerequisite: ME 220A.

Review the Navier-Stokes equations in velocity, pressure, and vorticity variables. Analyze details of important low and moderate Reynolds number flow applications and then high Reynolds number flows with boundary layer phenomena. Compare exact, approximate, numerical, and experimental solution methods.

223. Turbulent Flow
(3) STAFF

Prerequisites: ME 152A-B.

Nature and origin of turbulence, boundary layer mechanics — law of the wall, wakes, and jets, transport of properties, statistical description of turbulence, measurement problems, stratification effects. Application of principles to practical problems will be stressed.

225AA-ZZ. Special Topics in Mechanical Engineering
(3) STAFF

Prerequisite: consent of instructor.

Specialized courses dealing with advanced topics and recent developments in one or more of the following areas: dynamic systems, control and robotics, fluid mechanics, materials science and engineering, ocean engineering, solid mechanics and structures, thermal sciences.

226A. Applied Numerical Methods
(3) STAFF

Prerequisite: ME 140A.

An introduction to the numerical solution of ordinary and partial differential equations by means of finite difference and finite element procedures.

226B. Applied Numerical Methods
(3) STAFF

Prerequisite: ME 226A.

Weighted residual and finite element methods for the solution of partial differential equations with application to problems in fluid mechanics, heat flow, and mass transport.

228. Advanced Transport Phenomena-Turbulence Theory
(3) BANERJEE

Prerequisite: consent of instructor.

Same course as Chemical Engineering 220D.

Statistical formulation for turbulent flows, conditional averages and coherent structures, direct numerical and large eddy simulation, approaches to subgrid scale modelling, renormalization methods and closure: renormalized perturbation theory and renormalization group methods, dynamic subgrid scale models. Diffusion problems.

230. Elasticity
(3) STAFF

Prerequisite: ME 219.

Same course as Materials 230.

Review of the field equations of elasticity. Energy principles and uniqueness theorems. Elementary problems in one and two dimensions. Stress functions, complex variable methods and three-dimensional potential functions. Fundamental solutions in two and three dimensions. Approximate methods.

232. Plasticity
(3) STAFF

Prerequisite: ME 230.

Same course as Materials 232.

Plastic, creep, and relaxation behavior of solids. Mechanics of inelastically strained bodies; plastic stress-strain laws; flow potentials. Torsion and bending of prismatic bars, expansion of thick shells, plane plastic flow, slip line theory. Variational formulations, approximate methods.

233A-B. Design of Composite Structures
(3-3) KEDWARD

Prerequisite: ME 230 or 275A.

Emphasis is placed on the differences of design with composites vis-à-vis the design of conventional metallic structures. The content is directed at the class of polymer-matrix composites.

234A. Structural Dynamics
(3) STAFF

Prerequisites: ME 16, 163, and 166.

Formulation of the equations of motion for free and forced response of single and multi-degree of freedom systems and for distributed-parameter systems. Modal analysis. Approximate solution techniques. Numerical algorithms. Damping.

236. Nonlinear Control Systems
(4) STAFF

Same course as ECE 236.

Recommended preparation: ECE 230A.

Analysis and design of nonlinear control systems. Focus on Lyapunov stability theory, with sufficient time devoted to contrasts between linear and nonlinear systems, input-output stability and the describing function method.

237. Nonlinear Control Design
(4) STAFF

Prerequisite: ME 236.

Same course as ECE 237.

Stabilizability by linearization and by geometric methods. State feedback design and input/output linearization. Observability and output feedback design. Singular perturbations and composite control. Backstepping design of robust controllers for systems with uncertain nonlinearities. Adaptive nonlinear control.

239. Conduction Heat Transfer
(3) STAFF

Prerequisite: undergraduate course in heat transfer.

Development of mathematical representation of conduction heat transfer and techniques available for analytical, analog, and numerical solutions.

240. Convective Heat Transfer
(3) STAFF

Prerequisite: undergraduate course in heat transfer.

Solutions to the momentum, continuity, and energy equations will be considered for both natural and forced convection. Applications to industrial problems, convective transfer in high-speed flows, heat transfer in rarefied flows, and the effects of chemical reactions on convective rates will be included.

241. Radiative Energy Transfer
(3) STAFF

Prerequisite: undergraduate course in heat transfer.

The physical nature of radiation and of its interaction with matter, conservation principles in radiative transfer and their relation to molecular and convective processes, and thermodynamic equilibrium with consideration of nondimensional parameters will be considered. Applications to astrophysics, combustion, and plasma technology will be discussed.

243A-B. Linear Systems I, II
(4-4) DAHLEH

Prerequisites: A: ECE 234. B: ECE 140, 230A, and 234.

Internal and external descriptions. Solution of state equations. Controllability and observability realizations. Pole assignment, observers; modern compensator design. Disturbance localization and decoupling. Least-squares control. Least-squares estimation; Kalman filters; smoothing. The separation theorem; LQG compensator design. Computational considerations. Selected additional topics.

244A. Advanced Theoretical Methods in Engineering
(3) STAFF

Prerequisite: consent of instructor.

Same course as Chemical Engineering 230A.

Methods of solution of partial differential equations and boundary value problems. Linear vector and function spaces, generalized Fourier analysis, Sturm-Liouville theory, calculus of variations, and conformal mapping techniques.

244B. Advanced Theoretical Methods in Engineering
(3) STAFF

Prerequisites: ME 244A and consent of instructor.

Same course as Chemical Engineering 230B.

Advanced mathematical methods for engineers and scientists. Complex analysis, integral equations and Green's functions. Asymptotic analysis of integrals and sums. Boundary layer methods and WKB theory.

245. Numerical Methods for Free and Moving Boundary Problems
(3) STAFF

Prerequisite: some knowledge of finite difference and finite element methods.

A basic introduction to functional analysis. Formulation and numerical solutions for free and moving boundary problems with applications to such problems as steady and unsteady seepage, jets and cavities, melting and solidification of pure metals and alloys that freeze over a range of temperatures, etc.

250. Advanced Thermodynamics
(3) STAFF

Prerequisites: ME 151A-B.

An extended treatment of the fundamentals of classical thermodynamics, including availability and reversibility, the chemical potential, properties of matter, thermochemistry, chemical equilibrium of real gases and gas mixtures.

251. Statistical Thermodynamics
(3) STAFF

Prerequisites: ME 151A-B.

An extended treatment of the fundamentals of statistical thermodynamics, equilibrium distributions, properties of gases, liquids, and solids.

256A. Introductory Robust Control with Applications
(4) STAFF

Prerequisites: ECE 130C; ECE 230A or ME 255A; and, ECE 230B (may be taken concurrently).

Same course as ECE 232A.

Robust control theory; uncertainty modeling; stability of systems in the presence of norm-bounded perturbations; induced norm performance problems; structured singular value analysis; H-infinity control theory; model reduction; computer simulation based design project involving practical problems.

256B. Robust Control Theory
(4) STAFF

Prerequisite: ME 256A or ECE 232A.

Same course as ECE 232B.

Formulation of H-infinity, H_2, and 1_1 optimal control problems. Hankel singular values. Parametrization of achievable closed-loop maps. Linear time-invariant, linear time-varying, and nonlinear time-varying perturbation analysis. Model matching in 1_1 with duality theory. H-infinity model matching.

258. Optimum Structural Design
(3) STAFF

Prerequisites: ME 157A or ME 257 or ME 226A.

Synthesis of structural systems; design oriented analysis; design as an optimization task, fully stressed design, optimality criterion methods, mathematical programming methods. Application to mechanical, aeronautical, civil, and ocean structures.

259. Principles of Magnetic Fusion Power
(3) ODETTE

Prerequisites: background in engineering or physical sciences.

Not open for credit to students who have completed Nuclear Engineering 206.

The physical principles of magnetic and inertial confinement of thermonuclear plasma. Reaction physics, plasma properties, energy balances, confinement equilibria and stability, charged particle motion, and energy transport, Tokamak, mirror and inertial confinement scheme. Fusion power plant.

260A. Materials Structures and Bonding
(3) STAFF

Prerequisite: consent of instructor.

Crystal structures (Miller indices, Bravais lattices, symmetry operations, bases, crystal diffraction, reciprocal lattices, Brillouin zones); elements of statistical thermodynamics and quantum mechanics; ionic, covalent, and metallic bonding.

260B. Bonding and Crystal Elasticity
(3) STAFF

Prerequisite: consent of instructor.

Bonding and elasticity in metals, ceramics, and salts. Atomistic basis for structure, elastic behavior, and stability of crystals.

262. Thermodynamics and Phase Equilibria
(3) STAFF
Prerequisite: consent of instructor.
Same course as Materials 201.
Advanced thermodynamics with emphasis on phase equilibria, properties of solutions, and multicomponent systems.

264. Mechanical Behavior of Materials
(3) STAFF
Prerequisite: consent of instructor.
Fundamentals of deformation and fracture of materials, and strengthening through microstructural control. Time independent plasticity and hardening mechanisms. Creep and superplasticity. Fracture mechanics. Crack propagation and toughening mechanisms. Stress corrosion cracking. Fatigue. Fracture statistics.

265. Composite Materials
(3) STAFF
Prerequisite: consent of instructor.
Same course as Materials 261.
Stress and strain relations in composites. Residual stresses. The fracture resistance of organic and inorganic matrix composites. Statistical aspects of fiber failure. Composite laminates and delamination cracks. Cumulative damage concepts. Interface properties. Design criteria.

266. Advanced Solid Mechanics
(3) STAFF
Prerequisites: ME 219.
Same course as Materials 266.
Concepts with current significance in materials engineering will be covered. Examples include microstructural evolution, materials processing, properties of heterogeneous materials, microscopic modelling and manufacturing. Basic phenomena, analytical aspects and the link between scientific ideas and engineering practice will be emphasized.

270A. Robot Motion
(3) STAFF
Prerequisites: ME 170A-B-C and ECE 181A-B-C.
Advanced course on kinematics, dynamics, and control of robots. Position and force control. Efficient computation of kinematics and dynamics. Control of kinematically redundant robots. Control of closed link robots. Coordinated control of multiple robots. Control of multifingered robot hands.

271. Finite Element Structural Analysis
(3) STAFF
Prerequisites: ME 167 and ME 219.
Same course as Materials 240.
Definitions and basic element operations. Displacement approach in linear elasticity. Element formulation: direct methods and variational methods. Global analysis procedures: assemblage and solution. Plane stress and plane strain. Solids of revolution and general solids. Isoparametric representation and numerical integration. Computer implementation.

272. Advanced Finite Element Structural Analysis
(3) STAFF
Prerequisites: ME 271 and 234A.
Computer techniques for linear dynamic analysis of structures. Solution of large eigenvalue problems. Step-by-step integration of equations of motion. Analysis of structures with material and/or geometric nonlinearities. Computational techniques and computer program development. Iteration and step-by-step strategies.

273. Dislocation Mechanics
(3) BELTZ
Prerequisite: ME 230; concurrent enrollment in ME 275.
A rigorous review of classical dislocation theory with the intention of understanding its behavior in real materials (as it affects mechanical and electrical properties) as well as how it is used to construct solutions to elastic boundary value problems.

275. Fracture Mechanics
(3) STAFF
Prerequisite: ME 230.
Same course as Materials 234.
Analytic solutions of a stationary crack under static loading. Elastic and elastoplastic analysis. The J integral. Energy balance and crack growth. Criteria for crack initiation and growth. Dynamic crack progagation. Fatigue. The micromechanics of fracture.

283A. Waves in Fluids
(3) STAFF
Prerequisites: ME 152A-B.
The fundamental mechanics of water and acoustic waves. Governing equations. Wave propagation, refraction, and reflection. Noise generation. Dispersive effects; group velocity; stationary phase; ray theory. Onshore waves. Ship waves and wave resistance. Introduction to nonlinear effects; Stokes limiting wave; solitons.

283B. Advanced Water Waves
(3) STAFF
Prerequisite: ME 283A.
Advanced mechanics of waves, especially ocean waves. Linear stochastic wave systems; spectra. Nonlinear wave interactions. Wave stability and deformation; breaking. Wave group evolution; the cubic Schrodinger equation. Non-conservative systems: wind forcing, dissipation, and diffusion. Chaotic motions; soliton wave groups.

284. Advanced Hydrodynamics
(3) STAFF
Prerequisite: ME 152A.
Vorticity and vortical flows. Governing equations; vorticity theorems. Vorticity generation. Vortex dynamics. Vortex pairs. Karman street. Vortex sheets, tip vortices; trailing wake stability. Sheet and shear waves; Kelvin-Helmholz and shear stability. Rayleigh instability. Secondary flows. Discharge vortices. Vortex breakdown.

285. Geophysical Fluid Dynamics
(3) STAFF
Prerequisite: ME 152A.
The ocean-atmosphere systems. Air-sea interaction. Governing equations for rotating system: conservation of mass, momentum and energy. Ocean surface waves: generation, spectral characteristics. Internal waves. Geostrophic motion. Rotating boundary layers: Ekman dynamics. Tides. Kelvin waves.

286. Nearshore Processes
(3) STAFF
Prerequisite: ME 152A.
Nearshore wave dynamics: shoaling, breaking, run-up. Beach processes: longshore currents, undertow, rip currents, infragravity waves. Turbulent boundary layers: wave-current interaction. Sediment transport: critical conditions, bedload and suspended load, bedforms, scour, inlet migration and closure, harbor siltation, cliff erosion.

501. Teaching Assistant Practicum
(1-4) STAFF
Normally required of students serving as teaching assistants. No unit credit allowed towards advanced degree.
Practical experience in the various activities associated with teaching, including lecturing, supervision of laboratories and discussion sections, preparation and grading of homework and exams.

503. Research Assistant Practicum
(1-4) STAFF
Will not count as unit credit towards M.S. or Ph.D. degree in mechanical engineering.
Practical experience in the various activities associated with research, including experimental work, theoretical work and analyses, and assisting department faculty and other professional researchers in their duties.

596. Directed Reading and Research
(3) STAFF
Prerequisite: consent of instructor.
Cannot be used as part of the course requirements towards the M.S. and Ph.D. degree. S/U grading.
Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the department chair.

597. Individual Study for Ph.D. Qualifying Examination
(1-12) STAFF
Prerequisite: graduate standing.
No unit credit allowed toward advanced degree. Maximum of 12 units per quarter; enrollment limited to 24 units per examination. Instructor is normally student's major advisor. S/U grading.
Individual studies for Ph.D. qualifying examination.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisite: consent of thesis advisor.
No unit credit allowed toward advanced degree.
For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF
Prerequisite: consent of dissertation advisor.
No unit credit allowed toward advanced degree.
For research and preparation of the dissertation.

College of Letters and Science

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Dean, Undergraduate Studies: Alan J. Wyner

The College of Letters and Science is the largest center of teaching, learning, and research on the UCSB campus and the third largest in the University of California system. The college serves approximately 16,000 undergraduates and offers nearly 80 majors, including a number of interdisciplinary programs, and over 30 minors.

Students in the College of Letters and Science thrive on the academic diversity and strength of a research university, and also benefit from the college's commitment to undergraduate education. Opportunities for intellectual exchange with senior faculty abound, even at the lower-division level. The college curriculum encourages exploration and intellectual breadth through completion of the General Education Program, and it provides depth through the acquisition of the intellectual skills, perceptions, and methods of a specific academic discipline. An honors program provides enrichment opportunities for highly motivated students.

The college's Office of Student Academic Affairs and Advising, headed by the dean of undergraduate studies, offers academic advising and direction and administers the college's honors program. Three faculty members from diverse disciplines serve as assistant deans and are available for consultation on a variety of academic matters. Peer and college advisors assist students in individual consultations and in small group meetings and workshops.

Academic departments and programs form the core of the College of Letters and Science and are grouped into three divisions: Division of Humanities and Fine Arts; Division of Mathematical, Life, and Physical Sciences; and, Division of Social Sciences. These divisions foster intimate communities of scholars within the larger campus setting.

Division of Humanities and Fine Arts

The Division of Humanities and Fine Arts provides the foundation of the liberal arts education, focusing on the artistic and intellectual traditions of cultures throughout the world. Students in arts and humanities departments develop a sensitivity to language, an ability to express themselves clearly and with conviction, a familiarity with the power of literature and art, and a fresh awareness of timeless philosophical issues.

Starting in their freshman year, students have an opportunity to take courses taught by scholars in the first rank of national and international recognition. They can choose to major in an array of traditional fields including art (either art history or art studio), classics, dance, Asian studies, Chinese, Japanese, drama, English, film studies, French, German, history, Italian cultural studies, linguistics, music, philosophy, Portuguese, religious studies, Slavic languages and literatures, and Spanish. The division also encourages cooperation between students and scholars in diverse areas, creating an exciting synergy between such disciplines as environmental studies and art, music and computer science, and anthropology and literature. If students wish, they can major or pursue studies in such interdisciplinary programs as medieval studies, Renaissance studies, comparative literature, or Latin American and Iberian studies. Or they can, with the guidance of professors in several fields, develop their own special scholarly focus through the interdisciplinary studies major. The division's Interdisciplinary Humanities Center also provides a setting for cross-disciplinary exchange, sponsoring colloquia and seminars in which faculty and students explore issues on the cutting edge of research in the humanities. To help facilitate and enrich their studies, students in the humanities and fine arts can draw on the resources of an art museum, a two-million volume library, a humanities computing facility, and a large microcomputer laboratory.

Division of Mathematical, Life, and Physical Sciences

The Division of Mathematical, Life, and Physical Sciences is committed to the transmission of accumulated formal knowledge and structure in mathematics and the natural sciences. It also promotes the quantitative and scientific literacy so essential to intelligent participation in an increasingly technological society. The division offers courses and degrees in mathematics and statistics, in the life sciences of biology and psychology, and in the physical sciences of chemistry, geography (which also includes a social-scientific focus in areas of "human geography"), geology, and physics. In addition, the division is home to a unique, interdisciplinary, problem-oriented program (and popular major) in environmental studies. Allied departments in the division with particular strengths and interest in areas of ecology and the environment include ecology, evolution, and marine biology; geography; geological sciences; and molecular, cellular, and developmental biology. The division's undergraduate majors offer excellent preparation for graduate and professional schools, including medical schools, where our graduates have had exceptionally high acceptance rates.

Graduate programs and research are strong throughout the division. In addition to the usual departmental areas of graduate study, special interdisciplinary programs include those in neuroscience, biochemistry and molecular biology, and marine science. Unusual opportunities for strong interdisciplinary ties, and for interactions with distinguished visiting scientists from around the world, are fostered by a remarkable group of centers and institutes on campus. These include the Institute for Theoretical Physics, the Marine Science Institute, the David Simonett Center for Spatial Analysis (one of the few world centers for exploration and utilization of remote sensing techniques), the National Center for Ecological Analysis and Synthesis, the Institute for Free Electron Laser Studies, the Institute for Polymers and Organic Solids, the Center for the Study of Quantum Electronic Structures, and the Materials Research Laboratory.

Division of Social Sciences

The Division of Social Sciences develops in its students an understanding of the rich variety of the world's societies. Students in the division also learn to address important issues like internationalization, the link between science and technology and human affairs, modes of

conflict and communication within and between societies, and how the economy is affected by governmental decisions. In addition to the social science disciplines of anthropology, communication, economics, political science, and sociology, the division hosts a number of interdisciplinary programs, including Asian American studies, Black studies, Chicano studies, women's studies, global and international studies, and law and society. The division also encourages cross-disciplinary discussion in areas such as gender studies and the link between economy and society, which bring together anthropologists, economists, political scientists, and sociologists. Departments and programs within the division also maintain and from time to time develop new interdisciplinary ties with programs in the other divisions of the college. For example, students and faculty are currently involved in archaeological research and study combining anthropology, geology, biology, and history. The division is also home to the Physical Activities Program.

Research in the Division of Social Sciences is supported by a state-of-the-art Social Sciences Computing Facility.

Admission

Any student who is admissible to the university may be accepted by the College of Letters and Science provided that the college does not have more qualified applicants than openings, in which case preference will be given to advanced-standing students who are ready to enter the upper division, and to freshmen. Further, if the number of qualified applicants at either the junior or freshman levels exceeds the number of openings, admission to specific departments within the College of Letters and Science may be based on consideration of prior coursework, scholastic achievement, examination scores, or other factors.

Degree Requirements

The College of Letters and Science offers four bachelor's degrees: the bachelor of arts, the bachelor of science, the bachelor of fine arts, and the bachelor of music. See the chart under "Academic Units," page 18 for a full list of available degrees and majors.

The bachelor's degree requirements for students in the College of Letters and Science are as follows:

General University Requirements

Subject A—English Composition
American History and Institutions
Academic Residence
Grade-Point Average
General university requirements are described in the chapter of this catalog called "Undergraduate Education at UCSB."

General Education Requirements

(appropriate to degree chosen)

Major Requirements

(appropriate to degree chosen)
Major requirements are described under each department and program.

Unit Requirements

In order to be eligible for graduation, students must complete at least the following: 180 total units (184 if General Education Area B is met by completing foreign language level 3 at UCSB or its equivalent at another college or university); 162 units selected from courses on the Letters and Science List of Courses (166 if General Education Area B is met by completing foreign language level 3 at UCSB or its equivalent at another college or university); 60 upper-division units selected from courses on the Letters and Science List of Courses.

Students must earn a specified number of these units while in residence at UCSB. See the chapter titled "Undergraduate Education at UCSB" for details. There is no limit on the number of courses that may be taken passed/not passed during a single quarter. Nevertheless, at the time of graduation, students must have earned at least 120, or two-thirds, of their units at UCSB on a letter-grade basis.

Certain courses designated by the college as remedial are offered for work-load credit only, and do not figure in the calculation of the total number of units needed for a degree.

Letters and Science List of Courses

At least 162 units from the Letters and Science List of Courses (166 if General Education Area B is met by completing foreign language level 3 at UCSB or its equivalent at another college or university) are required. Certain military science courses and physical activities courses are not included on the Letters and Science List of Courses. All remaining courses in the College of Letters and Science are on the Letters and Science List. In addition, the following courses outside the college and the following approved military science and physical activities courses are also on the Letters and Science List:

Chemical Engineering 10, 110A-B, 120A-B-C, 128, 130A-B-D, 140A-B, 160, 180A-B
Computer Science (all courses)
Creative Studies (all courses)
Education 109S, 109SS, 125, 165, 165L
Electrical and Computer Engineering 130A-B-C, 152A-B-C, 154, 158, 177
Engineering 101, 103
Materials 10, 135
Mechanical and Environmental Engineering 114, 115, 119, 140A, 152A-B
Military Science 1A, 1C, 7, 8, 11, 141, 142, 143, 190
Physical Activities A101, A101L, A130, A131, A132, A140, A149, A150, A160, A170A-Z, A175A, A176, A180, A181, A182, A184. *Note:* Listed physical activities courses apply only if completed fall 1998 or later. Those completed earlier are *not* on the Letters and Science List.

Courses that do not appear on the Letters and Science List will apply to the total units required for graduation but will not apply to the 60 upper-division or the overall Letters and Science unit requirements described above.

Students transferring from other colleges or schools in which they have earned credit for a substantial number of courses considered non-Letters and Science, such as agriculture or journalism, should review the Letters and Science unit requirements and plan their programs at UCSB accordingly.

If a non-Letters and Science course is either required for or accepted into the major, it will be counted as a Letters and Science course at the time of the student's graduation, and thus will apply to the appropriate Letters and Science unit requirements.

Upper-Division Courses

Sixty upper-division Letters and Science units are required. UCSB courses on the Letters and Science List are considered upper-division if they are numbered 100-199. All courses in the College of Creative Studies, except Computer Science CS1, 2, 10, and 20; Physics CS1-6A and 15A-B-C and those courses designated General Studies CS10, are considered upper-division Letters and Science courses.

Transfer students from community colleges should take particular note of the upper-division unit requirement because community colleges do not offer upper-division courses.

Physical Activities Credit Limit

No more than 6 units of one-half-unit physical activities courses, or equivalent transfer courses, will be accepted toward the 180 (or 184) total units required for graduation.

The General Education Program

The General Education Program is the common intellectual experience of all UCSB students, whatever their majors. Through the General Education Program, students receive orientation to a broad range of intellectual disciplines: the kinds of questions that are addressed, the methods for solving problems, and the strategies for communicating findings and conclusions.

The General Education Program is multidisciplinary. It requires study in science and mathematics, history of Western civilization, social science, arts, and literatures. It also requires at least one course in a non-Western culture and at least one course that focuses on the history and cultural, intellectual, and social experience of designated U.S. ethnic groups.

The General Education Program also provides opportunities to acquire university-level skills in writing, critical thinking, quantitative analysis, and foreign languages, in courses specifically devoted to these topics and also in courses in which practice and instruction in these topics are embedded in the study of other subjects.

General Education Requirements

Students in the College of Letters and Science must complete the General Education requirements appropriate to their degree (B.A., B.S., B.F.A., or B.M.), in order to qualify for graduation.

Requirements may be satisfied with courses completed on the UCSB campus, with equivalent courses completed at another accredited institution, or by means of College Entrance Examination Board Advanced Placement credit. A list of courses that satisfy the various area requirements in the General Education Program appears below.

Students entering UC Santa Barbara as transfers from California community colleges may have their General Education requirements considered satisfied by virtue of completion of the Intersegmental General Education Transfer Curriculum (I.G.E.T.C.). This is a program of at least 34 semester-units of articulated course-work spread across six liberal arts subject areas. If fully completed prior to matriculation at UCSB and certified by the community college, I.G.E.T.C. will be accepted in satisfaction of the General Education Program. Normally, unless transfer students have fully completed the I.G.E.T.C. program at the time of transfer, they must satisfy all requirements within the General Education. However, students admitted fall 2000 or later who have partially satisfied I.G.E.T.C. are entitled to substitute I.G.E.T.C. for General Education Program requirements if they meet the following criteria: (1) they are lacking no more than two courses at the time of matriculation; (2) the community college certifies that a hardship prevented full satisfaction of I.G.E.T.C. and provides partial certification; (3) they complete the missing course(s) within one academic year of matriculation. Because of the time limit for completion of I.G.E.T.C. omissions, eligible students should consult the College of Letters and Science without delay to determine how they may fulfill these requirements.

General Provisions Governing All Degree Candidates

1. Courses in the student's major can also be used to fulfill General Education requirements.

2. Courses taken to satisfy the General Education requirements may also be applied simultaneously to the American History and Institutions requirement. (Refer to page 38.)

3. A course listed in more than one general subject area can be applied to only one of these areas. (Example: Art History 6A cannot be applied to both E-1 and F.)

Bachelor of Arts Degree

Special Subject Area Requirements

In the process of fulfilling the General Education Areas C through G, students must also complete the following special subject area requirements. Courses applicable to these requirements are listed following the description of General Subject Area Requirements A-G, below.

1. Writing Requirement. At least six designated General Education courses that meet the following criteria: (1) the courses require one to three papers totaling at least 1,800 words, exclusive of elements like footnotes, equations, tables of contents, or references; (2) the required papers are independent of or in addition to written examinations; and (3) the paper(s) are a significant consideration in the assessment of student performance in the course. Students may, by petition, request that up to two other UCSB courses be considered as applicable toward this requirement. Special instructions for such petitions are available from the college office. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses. A list of courses that meet the writing requirement may be found on page 113.

2. Non-Western Culture Requirement. At least one course that focuses on a non-Western culture. Courses applicable to this requirement are listed below.

3. Quantitative Relationships Requirement. At least one course from Area C emphasizing quantitative relationships. Courses applicable to this requirement are listed below.

4. Ethnicity Requirement. At least one course which concentrates on the intellectual, social and cultural experience, and the history of one of the following: Native Americans, African Americans, Chicanos/Latinos, Asian Americans, or a course that provides a comparative and integrative context for understanding the experiences of oppressed and excluded racial minorities in the United States.

General Subject Area Requirements

Note: Additional courses may have been approved to fulfill various General Education Area Requirements after the cut-off date for publication in this catalog. Please refer to the *General Education Program Requirements* brochure (available in the UCSB Bookstore) for up-to-date information.

AREA A

English Reading and Composition

Objective: To help students develop a facility in English composition.

Two courses are required. Writing 2, 2E or 2LK and one of the following: Writing 50, 50E, 50LK, 109AA-ZZ, or English 10.

Students must complete Writing 2, 2E, or 2LK by the end of their sixth quarter at UCSB. Further registration will be blocked for students who do not comply. The following courses cannot be dropped after the fifth day of instruction: Writing 2, 2LK, 50, 50LK. In addition, students cannot receive credit for these courses (or their equivalents taken at another institution) until they have fulfilled the Subject A requirement.

AREA B

Foreign Language

Objective: To help students gain a familiarity with a foreign language.

The foreign language requirement may be satisfied in one of the following four ways:

1. By completing foreign language level 3 (third quarter) at UCSB or its equivalent at another college or university. Students fulfilling Area B with this method will require 184 overall units and 166 Letters and Science units to fulfill degree requirements.

2. By achieving a score of 3 or higher on the College Board Advanced Placement Examination in a foreign language or by earning one of the following minimum scores on the Foreign Language SAT II: Chinese with Listening—570; French/French with Listening—590; German/German with Listening—570; Modern Hebrew—500; Italian—570; Japanese with Listening—570; Korean—550; Latin—580; Spanish/Spanish with Listening—570.

3. By completing the third year of one language in high school with a grade-point average for third-year language of at least C.

4. By passing a UCSB foreign language placement examination at the appropriate level.

AREA C

Science, Mathematics, and Technology

Objective: To provide an understanding of the methods and applications of science and mathematics, and the fundamental laws that govern the biological and physical worlds.

Three courses are required. The disciplinary subsections listed below are for students' information only; courses may be selected from any one subsection or combination of subsections.

The Biological Sciences

Chemistry 142A
EEMB 20, 21, 23, 24, 25, 136
Geology 7, 30, 30H, 111
MCDB 1A, 20, 21, 23, 24, 25
Natural Science 1C

The Physical Sciences:

Astronomy 1, 2
Chemistry 1A+1AL, 2A+2AL
Geography 3A-B
Geology 2, 4, 4S, 10, 20, 123
Linguistics 106, 185
Materials 10
Natural Science 1A, 1B
Physics 1, 2, 3+3L, 4+4L, 5+5L, 6A+AL, 6B+BL, 6C+CL, 10

Other Scientific Disciplines:

Anthropology 5
Communication 87
Computer Science 5AA-ZZ, 109A
EEMB 30
Environmental Studies 2, 115
Geography 12
Mathematics 3A-B, 3AS-BS, 34A-B, 109A
MCDB 28
Philosophy 183
PSTAT 5A, 5E
Psychology 5, 106
Speech and Hearing Sciences 121

AREA D

Social Science

Objective: To provide an understanding of what determines or influences the behavior and beliefs of individuals and groups.

Three courses are required.

Anthropology 2, 3, 3SS, 109, 110, 114, 122, 130A-B, 131, 134, 135, 136, 137, 138B, 141, 142, 144, 147, 148A, 156, 163, 171

Asian American Studies 1, 2, 3, 8, 100BB, 111, 131, 136

Black Studies 1, 3, 6, 10, 15, 20, 36, 50, 60A-B, 102, 103, 107, 121, 122, 134, 137E, 160, 169AR-BR-CR, 171

Chicano Studies 1A, 1B, 1C, 114, 115, 130A, 137, 140, 144, 151, 154F, 155W, 168A-B, 168PA, 168PB, 170A-B, 172, 173, 174, 176, 178A, 189C, 194

College Board Advanced Placement Credit/ General Education Program

Advanced Placement Exam with score of 3, 4, or 5	**Units awarded**	**General Education course credit**	**UCSB course equivalent** *(You may not enroll in these courses for credit at UCSB.)*
American Government and Politics	4	D: 1 course	Political Science 12
American History	8	D: 1 course	no equivalent
Art History	8	F: 1 course	Art History 1
*Art Studio General Portfolio	8	none	Art Studio 2D
*Drawing Portfolio	8	none	Art Studio 2D
Biology	8	C: 1 course	EEMB 20, MCDB 20, Natural Science 1C
Chemistry	8	C**: 1 course	Chemistry 25, Natural Science 1B
Comparative Government and Politics	4	D: 1 course	
+Computer Science A	2		
+Computer Science AB	4	C**: 1 course	Computer Science 5PA
Economics – Macroeconomics	4	D: 1 course	
Economics – Microeconomics	4	D: 1 course	
*English – Composition and Literature or Language and Composition			
With score of 3	8	none	Writing 1, 1E, 1LK
With score of 4	8	Writing 2	Writing 2, 2E, 2LK
With score of 5	8	Writing 2, 50	Writing 2, 2E, 2LK, 50, 50E, 50LK
Environmental Science	4◊	C: 1 course	
European History	8	E-2: 1 course	no equivalent
French Language or Literature			
With score of 3	8	B	French 1-5
With score of 4 or 5	8	B	French 1-6
German Language			
With score of 3	8	B	German 1-5
With score of 4 or 5	8	B	German 1-6
Latin: Vergil	4	B	Latin 1-3
Latin: Catullus – Horace	4	B	Latin 1-3
*Mathematics – Calculus AB (or AB subscore of BC exam)	4	C**: 1 course	Mathematics 3A, 15, 34A, or equivalent
*Mathematics – Calculus BC	8	C**: 1 course	Mathematics 3A, 3B, 15, 34A, 34B, or equivalent
*Music – Theory	8	F: 1 course	Music 11
*Physics – B	8	C**: 1 course	Physics 10, Natural Science 1A
Physics – C (Mechanics)	4	C**: 1 course	Physics 6A
Physics – C (Electricity and Magnetism)	4	C**: 1 course	Physics 6B
Psychology	4	D: 1 course	Psychology 1
Spanish Language			
With score of 3	8	B	Spanish 1-5
With score of 4 or 5	8	B	Spanish 1-6
Spanish Literature	8	B	no equivalent
Statistics	4◊	C**: 1 course	Communication 87, EEMB 30, PSTAT 5AA-ZZ, Psychology 5, Sociology 3

* A maximum of 8 units EACH in art studio, English, mathematics, music, and physics is allowed.

** Also satisfies the quantitative relationship requirement in Area C.

\+ Maximum credit for computer science exams is 4 units.

◊ 8 units if test taken prior to May 1999.

Classics 170A
Communication 1
Comparative Literature 119
East Asian Cultural Studies 189A
Economics 1, 2, 109
Environmental Studies 1, 130A-B, 132
French 121X, 122, 122X
Geography 5, 108, 150, 153A
German 33, 34, 165, 186
Global Studies 1, 2
History 7, 11A, 17A-B-C, 17AH-BH-CH, 78, 82, 105, 117A, 117C, 131F, 138B, 159A-B-C, 161A-B, 164PR, 167B, 167C, 167D, 167CA-CB-CP, 168A-B, 168L, 168PA-PB, 169AR-BR-CR, 171A-B, 172A-B, 175A-B, 189A
Italian 161AX
Japanese 25, 27, 162
Korean 82
Law and Society 1
Linguistics 20, 70, 130,132, 136, 180
Music 175D, 175E, 175J
Political Science 1, 12, 102, 109, 115, 121, 127, 129, 135, 136, 147, 150A, 151, 152, 154, 155, 158,171, 174, 185
Psychology 1, 102, 103, 105, 107, 108
Religious Studies 7, 14, 15, 40, 61A-B, 70, 110D, 114B-C-D, 115A, 131F, 131H, 136, 141A-B-C, 147, 151A-B, 152, 161A
Slavic 151, 163, 180
Sociology 1, 2, 2W, 111, 123, 126, 128, 130, 130LA, 130ME, 131, 131H, 133, 134, 134R, 137E, 139A, 142, 144, 152A, 153, 154A, 154F, 155A, 155M, 155W, 164, 166, 170
Spanish 178
Women's Studies 20, 30, 60, 117C, 153, 154A, 155A, 159A-B-C, 181

AREA E

Civilization and Thought

Objective: To provide a perspective on civilization through the study of human history and thought.

This requirement is met by courses in two categories. The first is concerned specifically with Western civilization, presented in a historical framework, whereas the second includes both Western and non-Western cultures, together with studies of major categories of human thought approached analytically rather than historically. Three courses are required, at least two must be from the same numbered sequence of E-1 courses (Western Civilization). The third course may be from Area E-1 or E-2 (World Civilizations and Thought).

Special note to students mixing semester and quarter courses in Area E-1: Only transfer courses equivalent to the History 4 or the Philosophy 20 series will be accepted in this area. Students who have completed the first semester course are directed to complete History 4C or Philosophy 20C, as appropriate. Students who have completed the second semester course should take History 4A or Philosophy 20A, as appropriate. In this particular area of the General Education requirements, no transfer courses are deemed equivalent to the Art History 6, the Comparative Literature 30, the French 40, or the Religious Studies 80 series.

E-1: *Western Civilization*
Art History 6A-B-C
Comparative Literature 30A-B-C
French 40AX-BX-CX
History 4A-B-C, 4AH-BH-CH
Philosophy 20A-B-C
Religious Studies 80A-B-C

E-2: *World Civilizations and Thought*
Anthropology 118TS, 138TS, 176TS
Art History 50, 136I, 144D
Black Studies 5, 7, 130A-B
Chinese 33, 148, 186M
Classics 100A-B, 101, 108
Comparative Literature 113, 119, 146
East Asian Cultural Studies 2, 3, 21, 80, 164B
Economics 111, 112A-B
English 125, 127
Environmental Studies 3, 107C, 107E
French 70Y-Z, 106A-B-C, 169B, 169BX, 171X, 192X
German 41, 108A-B, 116A, 117, 119, 141, 179A, 189A-B
Global Studies 1
History 6, 8, 13, 45, 46, 49, 80, 85, 87, 106A-B-C, 107A-B-C, 107E, 113B, 114A-B-C-D, 117D, 143, 144, 182A-B, 182E, 185A-B, 186M, 187A-B-C
Interdisciplinary 60, 110
Islamic and Near Eastern Studies 45
Italian 20X, 144AX
Japanese 32, 164
Korean 182A-B
Linguistics 30, 50
Mathematics 13
Philosophy 1, 3, 4, 100A-B-C-D-E, 112
Political Science 187, 188, 189
Portuguese 125A-B
Religious Studies 1, 3, 5, 8, 12, 20, 21, 25, 116A, 123, 126, 130, 136, 150, 164A-B
Slavic 33, 118
Spanish 153, 177
Women's Studies 180

AREA F

Arts

Objective: To develop an appreciation of the arts through historical study, analysis of master works, and aesthetically creative activity.

Two courses are required.

Art History 1, 6A-B-C-D-E-F-G-H-I, 6K-L, 50, 101A-B-C-D, 103A-B-C, 105A-B-C-D-E-F-G-H-I-J-K-L-M-N, 107A-B-C-D, 109A-B-C-D-E, 111A-B-C-D-E-F, 113A-B-C-D, 115A-B-C, 117A-B-C-D-E, 119A-B-C-D-E-F, 121A-B-C-D, 121F-G, 123A-B-C, 125A-B, 127A-B, 129A, 130A-B-C-D, 132A-B-C-D-E-F, 134A-B-C, 134E-F-G-H, 136A-B-C, 136E-F, 136H-I, 138A-B-C-D-E-F, 140A-B-C, 141A, 143B-C, 144A-B-C-D, 184A-B
Art Studio 1A, 4D, 125
Black Studies 14, 142, 145, 161, 170, 171, 172
Chicano Studies 138, 148, 187, 188A-B-C
Chinese 141
Classics 102, 170B
Dance 35, 36, 45, 145A-B-C, 145M, 145W, 146
Dramatic Art 5, 60, 60S, 106, 155A-B, 160A-B-C-D-E-F, 162, 166
Film Studies 46, 101A-B-C, 107, 120, 123, 125A-B, 133, 136, 144, 146, 161, 163, 165, 175, 191, 193
French 133, 138, 138X, 178Y
German 151B, 180Z, 183
Interdisciplinary 188A-B
Italian 180Z
Japanese 149, 159
Music 11, 15, 17, 112A-B-C-D-E-F, 114, 115, 118A-Z, 119A, 168D, 175D-E, 175H-I
Philosophy 136
Portuguese 128
Slavic 118, 144A-B-C, 151B
Spanish 126, 127
Women's Studies 145

AREA G

Literature

Objective: To develop an appreciation of literature through historical study, analysis of master works, and aesthetically creative activity.

Two courses are required.

Asian American Studies 5
Black Studies 38A-B, 127, 130A-B
Chicano Studies 152, 180, 181, 184A, 190
Chinese 110A-B, 111, 112A-B, 115A, 139, 145, 148
Classics 36, 37, 38, 39, 40, 102, 109, 110, 120, 130
Comparative Literature 30A-B-C, 31, 32, 100, 101, 107, 113, 117A-B, 128, 133, 146, 153, 161
English 15, 21, 101, 102, 103A, 103B, 104A, 104B, 105A, 105B, 105S, 113AA-ZZ, 114AA-ZZ, 115, 116A-B-C, 120, 121, 122AA-TT, 123, 124, 126A-B-C-D, 128AA-ZZ, 131, 133AA-ZZ, 134AA-ZZ, 135, 136, 137A-B, 138A-B-C, 140, 144, 145, 150, 152A-B, 154, 157, 162, 165AA-ZZ, 172, 177, 178, 179, 180, 181, 184, 185, 187, 189, 190, 191, 192, 193
Environmental Studies 160, 193EL
French 67X, 70X, 70Z, 106X, 108X, 120X, 130X, 132X, 136X, 137X, 138X, 139X, 142X, 145X, 146X, 160X, 166X, 169BX, 170X, 171X, 175X, 180X, 192X, 196X
German 116A, 138, 139, 141, 143, 151B, 161, 163, 164E, 164G, 166, 168, 169, 175, 179A, 180, 182, 187
Global Studies 101
Hebrew 111, 119
Interdisciplinary 105, 115, 188A-B
Italian 114X, 138AX, 144AX
Japanese 110A-B-C, 112, 115
Korean 113

Music 187
Portuguese 114, 115, 120, 180
Religious Studies 114X, 129, 189A-B-C
Scandinavian 137
Slavic 115A-B, 116B, 117F-G, 125A, 125B, 141, 151B, 154, 162, 170
Spanish 115A-B, 120A-B, 135, 142A-B, 179
Women's Studies 40, 140
Literature courses taught in their original languages:
Chinese 124A-B, 132A-B
French 136A, 136C, 136E, 138, 140B-C, 141, 142, 143, 144, 150A-B, 154, 163, 164, 168, 169B, 170B, 180A-B-C, 181
German 115A-B-C, 142
Greek 100, 101
Latin 100, 101
Portuguese 105A-B-C, 106A-B-C, 185
Religious Studies 142A-B-C
Spanish 30, 137A-B, 140A-B, 174

Courses that Apply to the Writing Requirement

At least six of the following courses. Details on criteria for these courses may be found on page 110. Courses on the list below may also apply to their respective areas of the General Education Program.

Anthropology 3, 104, 115DS, 116, 116B, 122, 132, 135, 141, 141DS, 142B, 143, 163, 170, 171, 172, 173, 185DS, 186
Art History 6A-B-C-D, 6F-G-H-I, 6K, 50, 101A-B, 101D, 105A-B, 105F, 105H-I-J-K, 105N, 109B, 113A-B-C-D, 115A-B-C, 117A-B-C-D, 119A-B-C, 121A-B-C-D, 121G, 127A, 129A, 130A-B, 130D, 132A-B-C-D-E-F, 136A-B, 136F, 136I, 138D, 140C, 143B, 144A, 144C, 184A
Art Studio 1A
Asian American Studies 5, 8, 100BB, 111, 121, 122, 128, 131, 134, 136, 137, 150
Black Studies 1, 5, 6, 7, 10, 14, 20, 36, 38B, 50, 60A-B, 102, 103, 107, 130A, 134, 137E, 145, 160, 162, 169AR-BR-CR, 170, 171, 172
Chemistry 1AC, 1BC, 1CC
Chicano Studies 1A-B-C, 131, 144, 152, 154F, 168PA-PB, 172, 180, 181, 184A, 194
Chinese 33, 110B, 112A-B, 124A-B, 132A-B, 139, 150, 166A-B-C-E, 183
Classics 38, 39, 101, 102, 109, 110, 120
Communication 1, 150, 155
Comparative Literature 30A-B-C, 31, 32, 107, 113, 119, 124, 128, 133, 153, 161, 170
Dance 36, 145A-B-C, 145M, 145W
Dramatic Art 106, 155A-B, 160A-B-C-D-E-F, 166
East Asian Cultural Studies 2, 3, 21, 80, 161B, 175, 178
Education 165
EEMB 138, 145BL, 147, 179
English, all courses assigned to Area G
Environmental Studies 1, 2, 3, 107E, 160, 189, 193EL
Film Studies 46, 101A-B-C, 120, 123, 125A-B, 133, 136, 144, 146, 163,165, 191, 193
French 67X, 70Z, 106A-B-C-X, 108X, 120X, 121X, 122, 122X, 130X, 132X, 133, 136A, 136C, 136E, 136X, 137X, 138, 138X, 139X, 140B-C, 141, 142, 142X, 143, 144, 145X, 146X, 150A-B, 154, 160X, 166X, 168, 169B, 169BX, 170B, 170X, 171X, 175X, 178Y, 180A-B-C, 180X, 181, 192X
Geography 180
Geology 4S, 10, 30H, 104A, 117, 123, 157, 161, 162
German 33, 34, 41, 108A-B, 115A-B-C, 116A, 117, 119, 138, 139, 141, 142, 143, 151B, 163, 164E, 164G, 165, 169, 175, 179A, 180, 180Z, 182, 183, 186, 187, 189A-B
Global Studies 1, 2, 101
Hebrew 111
History 4A-B-C, 4AH-BH-CH, 6, 7, 8, 11A, 13, 17A-B-C, 17AH-BH-CH, 46, 49, 80, 87, 106A-B-C, 107E, 113B, 114A-B-C-D, 117A, 117C-D, 123B, 128F, 131F, 133A-B, 133D, 143, 144, 153, 155A-B, 155E, 157A-B, 159A-B-C, 164PR, 167B, 167CA-CB-CP, 167D, 168L, 168PA-PB, 169AR-BR-CR, 172A-B, 179A, 182A-B, 185A-B, 187A-B-C
Interdisciplinary 20, 60, 106, 115, 188A-B
Italian 114X, 138AX, 144AX, 161AX, 180Z
Japanese 22, 25, 27, 32, 110A-B-C, 112, 119, 159, 162, 167A-B, 167D
Korean 182A-B
Latin American and Iberian Studies 102
Linguistics 30, 70, 136, 180
Materials 10
MCDB 28, 134H, 167, 194DS
Music 15, 112A-B-C-D-E-F, 114, 115, 118A-Z, 119A, 168D, 175D-E, 175H-I-J, 187
Philosophy 1, 4, 7, 20A-B-C, 100A-B-C-D-E, 112, 136
Political Science 1, 7, 12, 102, 115, 121, 129, 136, 150A, 151, 152, 154, 155, 185
Portuguese 114, 115, 120, 125A-B
Psychology 7, 90A-B-C, 91A-B-C, 110L, 111L, 112L, 114L, 116L, 117L, 135A-B-C, 140, 143S
Religious Studies 3, 5, 7, 8, 14, 15, 20, 21, 22, 61A-B, 70, 80A-B-C, 106, 107, 110D, 114B-C-D, 116A, 120, 123, 126, 127B, 130, 131F, 131J, 136, 140A-B-C, 141A-B-C, 144, 145, 147, 150, 151A-B, 161B, 163, 164A, 166A-B-C, 166E, 167A-B, 167D, 168A, 168C, 173, 175, 178, 183, 189A-B-C, 193
Slavic 116B, 117G, 117H, 125A, 125B, 141, 144A, 144C, 151, 151B, 154, 162, 163, 170, 180
Sociology 2W, 123, 128, 130, 130LA, 130ME, 134, 134R, 137E, 144, 153, 154A, 154F, 155M, 170, 176A
Spanish 115A-B, 120A-B, 135, 142A-B, 178, 179
Speech and Hearing Sciences 50
Women's Studies 20, 30, 40, 60, 117C, 140, 142, 143, 145, 153, 154A, 159A-B-C, 180, 186SL

Courses that Apply to the Requirement in Quantitative Relationships

At least one of the following courses from Area C which emphasizes quantitative relationships is required.

Astronomy 1, 2
Chemistry 1A+1AL, 2A+2AL
Communication 87
Computer Science 5AA-ZZ, 109A
Environmental Studies 115
Geology 2, 4, 4S, 7, 10, 20, 123
Mathematics 3A-B, 3AS-BS, 34A-B, 109A
Natural Science 1A-B
Physics 1, 2, 3+3L, 4+4L, 5+5L, 6A+AL, 6B+BL, 6C+CL, 10
PSTAT 5A, 5E
Psychology 5
Speech and Hearing Sciences 121

Courses that Apply to the Non-Western Culture Requirement

At least one of the following courses that focus on a non-Western culture is required. Courses noted on the list below also may apply to their respective areas of the General Education Program.

Anthropology 2, 3, 3SS, 110, 114, 118TS, 122, 130A-B, 131, 134, 135, 136, 137, 138B, 138TS, 141, 142, 142B, 144, 148A, 156, 163, 171, 176TS
Art History 6D-E, 6H, 6K, 121F, 121G, 127A-B, 129A, 130A-B, 130D, 132A-B-C-D-E-F, 134A-B-C, 134E-F-G-H, 140C
Black Studies 3, 5, 7, 10, 36, 130A-B, 134, 161, 162, 171
Chicano Studies 137
Chinese 33, 110A-B, 111, 112A-B, 115A, 124A-B, 132A-B, 139, 141, 145, 148, 166A-B-C-E, 183, 186M
Comparative Literature 31, 32
Dance 35, 146
Dramatic Art 166
East Asian Cultural Studies 2, 3, 21, 80, 161B, 164B, 178, 189A
Environmental Studies 130A-B, 189
Film Studies 120, 161
French 192X
Global Studies 1
History 45, 46, 49, 80, 82, 85, 87, 142, 143, 144, 146A-B-T-W, 156A-B, 182A-B, 182E, 185A-B, 186M, 187A-B-C, 189A
Interdisciplinary Studies 115
Islamic and Near Eastern Studies 45
Japanese 22, 25, 27, 32, 110A-B-C, 112, 115, 149, 159, 162, 164, 167D
Korean 82, 113, 182A-B
Linguistics 136
Music 175C, 175E, 175H-I-J
Political Science 135, 136, 147, 150A
Religious Studies 3, 20, 21, 22, 129, 131H, 140A, 140C, 140D, 140F, 158, 160, 161A-B, 162A, 163, 164A-B, 166A-B-C, 166E, 167D, 168, 168A, 168C-D, 169, 175, 178, 183, 189A-B-C, 193

Sociology 130, 130ME, 131H
Spanish 177, 178
Women's Studies 30

Courses that Apply to the Ethnicity Requirement

The courses listed below will satisfy the ethnicity requirement and may be applied to their respective areas of the General Education Program.

Anthropology 131, 148A
Art History 6E, 121D, 121F-G, 125A-B, 127B, 129A
Asian American Studies 1, 2, 3, 5, 8, 100BB, 111, 121, 122, 128, 131, 136
Black Studies 1, 5, 6, 14, 15, 20, 38A-B, 50, 60A-B, 102, 103, 107, 121, 122, 127, 134, 137E, 142, 145, 160, 169AR-BR-CR, 170, 172
Chicano Studies 1A-B-C, 115, 130A, 131, 137, 138, 139, 140, 143, 144, 148, 151, 152, 154F, 155W, 168A-B, 168E-F, 168PA-PB, 170A-B, 172, 173, 174, 178A, 180, 181, 184A, 188C, 189, 189B, 190
Comparative Literature 153
Dramatic Art 163
English 114BW, 114NW, 122BP, 134AA-ZZ, 191
Environmental Studies 189
History 11A, 131F, 160A-B, 161A-B, 164PR, 167C, 168A-B-E-F, 168PA-PB, 169AR-BR-CR, 169M, 179A-B
Interdisciplinary 110
Linguistics 136, 180
Music 175D
Political Science 174
Religious Studies 14, 61A-B, 110D, 114B-C-D, 123, 124, 131F, 140E, 193
Sociology 128, 137E, 139A, 144, 153, 154F, 155M, 155W
Spanish 109, 135, 179
Women's Studies 60, 140, 142, 145, 153, 186SL

Bachelor of Science Degree

Candidates for the bachelor of science degree must complete the following general subject area requirements: Area A; Area B; Area C; two courses from Area D; two courses from Area E; one course from Area F; one course from Area G.

Students are also responsible for completing all of the special subject area requirements as outlined in the B.A. requirement section.

Bachelor of Fine Arts; Bachelor of Music Degree

Candidates for the degree of bachelor of fine arts or bachelor of music must complete the following general subject area requirements: Area A; Area B; two courses from Area C; two courses from Area D; two courses from Area E; one course from Area G.

Students are also responsible for completing all of the special subject area requirements as outlined in the B.A. requirement section.

Honors

The College of Letters and Science is committed to academic excellence and offers students with records of superior scholarship a number of special opportunities.

College of Letters and Science Honors Program

The College Honors Program permits students to intensify their educational experience and to participate in a small community atmosphere within the larger university setting throughout their four years of undergraduate study. College Honors Program participants benefit from increased contact with both faculty and peers in small classes and special programs.

Participants in the honors program enjoy graduate library privileges, preferential class enrollment, use of the honors study center, participation in the peer mentorship program, and special advising services. Housing is available to eligible first-year students in Scholars Halls located in several university-owned residence halls.

Honors program students may enroll in special honors sections of large introductory courses that provide preparation for the major or fulfill general education area requirements. With faculty approval, upper-division College Honors Program students may design their own honors contracts, and have special research opportunities available to them. Students may also enroll in upper-division Honors Forum seminars, which focus on themes like Underground Paris; Plato's *Republic*; hormones; evolutionary game theory; cloning; and multilingualism. These courses give students the chance to find mentors among some of UCSB's most dedicated faculty. A new selection for the Honors Forum courses is announced at the beginning of each academic year. In addition, students may participate in the departmental senior honors programs described later in this section.

Undergraduate research opportunities combine two of UCSB's greatest resources, the distinction of its research faculty and the excellence of its undergraduate programs. Honors students may engage in independent and team research under the supervision of a faculty researcher. Special access to advising and research funding is available to honors program participants. Contact the Office of Special Programs for additional information.

Entering freshmen students are invited into the College Honors Program based on high school grade-point average and SAT I (or ACT score) and SAT II scores. In the typical entering freshman class, 10 percent of the students are in the College Honors Program. Transfer students with a 3.6 grade-point average when they enter UCSB are eligible and are encouraged to apply. The College Honors Program is also open to any UCSB students with an overall grade-point average of 3.5 on a minimum of 12 graded baccalaureate units. *Please note: Eligibility criteria are subject to change at any time.*

Students may continue as program members as long as they maintain the required grade-point average and complete at least 6 units of honors coursework each year. An annual review is conducted during the summer. A minimum grade of B is required for the honors designation to be assigned to a course.

To complete the program and receive the Academic Excellence Award, a student must earn 36 units of honors-designated courses with at least a B grade, earn a minimum overall grade-point average of 3.5, and complete volunteer service. At least 20 of the 36 honors-designated units must be upper division. Completion of 20 units of upper-division honors-designated courses qualifies junior transfer students (who are eligible for the honors program at the time of admission) for the Academic Excellence Award. The total number of honors-designated units is reduced to 28 (including 12 upper-division) for students who participate in the University of California's year-long Education Abroad Program.

A Certificate of Academic Excellence will be awarded by the College of Letters and Science provost to all graduating seniors who complete the College Honors Program.

Departmental Senior Honors Programs

Most departments in the college sponsor honors programs that provide opportunities for research and independent study in the major field. Students are normally selected for the departmental honors program at the end of their junior year. They devote much of their senior year to the design and completion of an original research project or senior thesis. Members of departmental honors programs who complete their project or thesis with distinction are eligible for nomination by their departments for the award of Distinction in the Major. Honors program participants are granted special UCSB Davidson Library privileges normally available only to graduate students. In addition, they are eligible to apply for several fellowships, including the President's Undergraduate Fellowships, the May Company Scholarships, the UCSB Foundation Awards, the Genesis Awards, and the Howard Hughes Medical Institute Fellowship. In 1999-2000, a total of 230 fellowships were awarded amounting to $250,000.

Dean's Honors

The award of Dean's Honors is granted at the end of each quarter to those students who earn a grade-point average of 3.75 or higher for the quarter, on a program of 12 or more letter-graded units, with no NP grades. Students with approved permanent deficit petitions may qualify for Dean's Honors if they earn the necessary grade-point average on 12 letter-graded units during a period of two or more consecutive quarters. The receipt of Dean's Honors is recorded permanently on the transcript. Grades of I normally disqualify students from eligibility for Dean's Honors for that term.

Honors at Graduation

Students with outstanding academic achievement are honored at the time of graduation. College Honors are awarded to those Letters and Science undergraduates who have completed 135 or more letter-graded units in the University of California with a grade-point average of at least 3.85. General honors at graduation are awarded to the top 20 percent of students who complete at least 76 letter-graded units in the University of California, as follows: The top 2.5 percent receive Highest Honors, the

next 6 percent receive High Honors, and the next 11.5 percent receive Honors. Members of departmental honors programs who complete their project or thesis with distinction are eligible for nomination by their departments for the award of Distinction in the Major.

Provost's Honors Council

The Provost's Honors Council is a group of approximately 30 undergraduates in the College of Letters and Science Honors Program, primarily juniors and seniors with records of scholastic excellence. The council is selected from nominations submitted by department chairs and student applications. The council provides a forum for the exchange of information and ideas on academic matters. Council members continue to serve until the time of their graduation.

Phi Beta Kappa

Phi Beta Kappa, established in 1776, is the nation's oldest and most respected scholastic honorary society, its purpose being to honor high achievement in the liberal arts and sciences. According to the society's handbook, the objectives of humane learning encouraged by Phi Beta Kappa include intellectual honesty and tolerance, range of intellectual interests, and understanding—not merely knowledge. The UCSB chapter, California Lambda, was established in 1967 and has maintained a high standard of admission. Election is by invitation only, and is offered to no more than one percent of graduating seniors each year. Election in the junior year is extremely rare.

To be eligible for consideration, a student must have a grade-point average of at least 3.75 for juniors and 3.4 for seniors, have completed four quarters of a single foreign language, and have taken plane geometry and algebra through quadratics. Each senior candidate must have completed 60 units of work at UCSB (junior candidates must have completed 120 units), excluding professional, vocational, technical, recreational, and remedial courses, and all courses taken on the P/NP basis. A record which shows more than 15 P/NP units is normally disqualified, although exceptions are made for candidates in the College of Creative Studies and occasionally for others of extraordinary achievement. Election to Phi Beta Kappa takes place in the spring quarter, and normally requires that the candidate have demonstrated evidence of genuine intellectual curiosity and achievement beyond the minimum outlined above. Most departments at UCSB have members of Phi Beta Kappa on their faculty. Students are urged to contact faculty members or departmental undergraduate advisors for further information.

Academic Programs and Options

Options for Accelerated and Independent Study

Qualified students may accelerate their progress through portions of the undergraduate curriculum by presenting excellent scores on the College Board Advanced Placement Examinations, by performing well in various departmental placement examinations in fields such as foreign languages, fine arts, and mathematics, and by earning credit for university courses by examination. These options are described in the "Undergraduate Education at UCSB" chapter of this catalog.

Qualified students may enroll in advanced, upper-division courses, provided they have fulfilled the course prerequisites or have obtained the instructor's permission. Upper-division students with excellent academic records may enroll in independent reading or studies courses 198, 199, and 199RA. Exceptionally qualified seniors are sometimes encouraged to enroll in graduate courses.

Advanced Placement Credit

Students who complete special advanced placement courses in high school and who earn scores of 3, 4, or 5 on the College Board Advanced Placement Examination taken before high school graduation will receive 2, 4, or 8 units of credit toward graduation at UCSB for each such test completed with the required scores, provided scores are reported to the Office of Admissions. The specific unit values assigned to each test, and the applicability of this credit to the General Education requirements, are presented in the chart on page 111. *Note: Advanced Placement credit earned prior to entering the university will not be counted toward maximum unit limitations either for selection of a major or for graduation.*

Undergraduate Research and Creative Activities

In keeping with the university's commitment to promote the scholarly work of undergraduates, the College of Letters and Science at UC Santa Barbara offers various programs to support research and creative activities under faculty supervision. In November, undergraduates from all majors may apply for **SPUR** awards of up to $1,000 that are supported by various funding sources. During the academic year, students can earn course credit by actively working on projects under the **Faculty Research Assistance Program** (**FRAP**). Lists of participating faculty and descriptions of their projects can be found in the *FRAP Directory*.

Research support for underrepresented minority undergraduates and women in fields where they are considered underrepresented—science, engineering, and mathematics—is also available through the College's **Pre-graduate Mentor Program** and the **California Alliance for Minority Participation** (**CAMP**).

Students involved in research and creative projects have an opportunity to present their work at the spring Colloquium on Undergraduate Research. Lists of related scholarly experiences can be found in *Opportunity Alert*, a booklet that is updated annually in fall quarter. For more information about undergraduate research opportunities, visit the college's Special Programs Office web site: www.LTSC.ucsb.edu/special_programs/.

Accelerated Study Access Program

The Accelerated Study Access Program (ASAP) in the College of Letters and Science allows highly qualified students from junior and senior high schools in the Santa Barbara area to enroll simultaneously in their home schools and at UCSB. ASAP participants are admitted to the University of California in freshman standing, and they have access to nearly the entire range of academic resources of the campus. They may enroll in any UCSB course for which they are qualified, and they will receive full university credit for each course satisfactorily completed. When they have graduated from high school, ASAP members may continue their education at UCSB, or they may be eligible for admission to another campus of the University of California or to any other institution of higher education for which they are qualified. Brochures describing the program, eligibility requirements, and application procedures are available from the college office, 1117 Cheadle Hall.

The Letters and Science Program

Freshman and sophomore students who have not yet selected a major will be part of the Letters and Science Program. While they are in this program, they are encouraged to take courses in a variety of departments to help them to develop their interests and to learn about the range of academic opportunities available at UCSB. The College of Letters and Science, and many individual academic departments, offer special advising services to undeclared students to help them make sound academic decisions. Students are expected to declare a major by the time they have reached junior standing (completion of 84 quarter-units). Those who do not meet this expectation will have their future registration blocked.

Individual Major

Highly motivated students with excellent academic records who find that no single major accommodates their specific interest in a given subject may propose an individual major, provided that the college offers sufficient courses to support the proposed study. Proposals for individual majors are prepared with the guidance of a faculty member, and they are examined for cogency and academic merit by the dean of undergraduate studies and the Executive Committee of the College of Letters and Science, which has final approval authority.

Minimum qualifications for proposing an individual major include a grade-point average of at least 3.0 and residence in the college for at least three quarters. Final proposals for individual majors must be submitted no later than the end of the junior year. However, students are urged to discuss their ideas with a college advisor well before then, to allow sufficient time for preparation, review, and approval of the proposal. Normally, this process takes at least three months. Information sheets describing the individual major option are available in the college office.

Double Majors

Students with interest and talent in two separate major fields may propose completion of a double major. In their proposal, they must estimate the number of units they will need to complete in satisfying degree requirements and the term in which they will become eligible to graduate. In general, double majors are approved for students who demonstrate that they can meet all degree requirements without exceeding 200 units of credit from all institutions attended. Students who receive approval

for a double major will be allowed to continue their studies at UCSB only through the final quarter listed on their proposal. No more than 8 units may be applied simultaneously to the upper-division requirements of the two majors.

Academic Minors

Students may pursue an academic minor in addition to their major under a formal minors program offered by an individual department or program, or a multidisciplinary group of departments and/or programs. Completing a minor offers students a cohesive supplement to their major, reflecting well-rounded interests and course of study. In addition, a minor program often helps students to structure their choice of elective units as they fulfill the college's unit requirements. To ensure appropriate advising and planning, students who are considering a minor should consult the sponsoring department as soon as possible. They *must* request that the department confirm completion of the minor no later than the second week of the quarter in which they announce candidacy to graduate.

The minor is not listed on the diploma, but upon completion of the degree, it will be posted on the official transcript and a certificate will be prepared, provided the following conditions also are met:

- The sponsoring department reports the student's completion of the minor prior to the posting of the degree.
- The student has completed at least 18 upper-division quarter units pertinent to the minor. Some minors require more than 18 upper-division units. (Waivers cannot reduce the requirement below 18 units.)
- Courses for the minor are all completed for a letter grade. (At its discretion, the sponsoring department may accept up to 5 units graded P.)
- The UC grade-point average in pertinent upper-division courses is 2.0 or higher.
- No more than 5 upper-division units overlap between this minor and the upper-division portion of the student's major(s) or other minor(s). If overlap is greater with the student's major(s), the completion of the minor will not be formally recognized; if overlap with other minor(s) is greater, only the first minor reported will be recognized.
- The student has completed at least 12 of the upper-division units for the minor while in residence at UCSB. (EAP courses do not apply to residence.) Courses applied to the major residence requirement may not also be applied to the minor residence requirement.

No reference will be made to the minor on any progress checks or degree clearance forms.

Freshman Seminars

The freshman seminar program was created to help freshmen make the transition to campus life. Taught by active research faculty, these seminars help students explore different fields and disciplines in a small group discussion setting. Topics have included Thinking About Gandhi's Thoughts; Energy: Present Inventories and Future Prospects; and the Internet: The Information Superhighway. Seminars are offered quarterly. They can be found in the *Schedule of Classes*, listed as Interdisciplinary 94AA-ZZ.

Academic Policies and Procedures

Change of Major

Upon completion of prerequisites for admission to the major, students may petition to change their major. The petition should be filed not later than the end of the junior year, and requires the approval of the chair of the prospective department and the provost of the college. Students who contemplate a change of major relatively late in their academic careers should note that the change may not be approved if it becomes clear that they will need to complete more than 200 units in order to fulfill all degree requirements.

Community College Credit Limit

The university accepts a maximum of 105 quarter-units or 70 semester-units of credit for college courses completed at a two-year community college. (Only subject credit for specific lower-division requirement is assigned subsequently.)

Concurrent enrollment

Students who wish to enroll simultaneously in undergraduate courses at UCSB and at another college-level institution must obtain prior written approval from the provost or dean of their college. Normally, such enrollment is approved only for courses that are not available in the curriculum at UCSB.

Minimum Academic Progress

The recommended study load for a full-time undergraduate student in the College of Letters and Science is 12 to 16 units per quarter. An average load of 15 units must be maintained if the student expects to complete degree requirements in four years.

It is the policy of the College of Letters and Science to monitor the academic progress of students and to apply the following restrictions if progress is not maintained. Undergraduate students who do not pass at least 36 units during any three consecutive terms may be placed on probation and may have strict study list controls placed on their quarterly programs until it is determined that satisfactory academic progress has been made. Further, students who do not pass at least 32 units during three consecutive terms may also be subject to strict study list controls and may, at the discretion of the provost, be in jeopardy of having their registration cancelled.

All study lists of fewer than 12 units must be approved by the dean of undergraduate studies. Students who, for health reasons, or regular outside employment, or personal and/or family responsibilities, are unable to maintain the 12-unit quarterly minimum may request an exception by submitting the appropriate petition to the college office.

200-Unit Enrollment Limit

Students are normally expected to complete all of their degree requirements by the time they have undertaken 200 total units. Units earned through College Board Advanced Placement examinations or college units earned before high school graduation will not be calculated in this 200-unit maximum. If enrollment beyond this limit is desired, students must obtain approval by submitting a Proposed Schedule for Graduation to the dean of undergraduate studies, giving their reasons for continued enrollment and outlining their proposed programs. Students who enroll in courses beyond 200 units without approval will have their enrollment blocked for subsequent quarters.

Preparing for Careers and for Graduate and Professional Schools

While enrolled in the College of Letters and Science, students have access to career-planning advice, and they can prepare for admission to a variety of graduate and professional programs offered by the University of California and other colleges and universities. To assist them in the process, the college provides pre-professional advising in a number of fields. Students are invited to discuss their plans with the college pre-professional advisor and to use the resources of the college office and of Counseling and Career Services, Building 599.

Career Planning

Counseling and Career Services, Building 599, is of particular assistance to students who are searching for a rewarding career. The center offers individual counseling, workshops, career literature and a computer access to job listings, corporate profiles, and graduate school information. The JobsLine offers part time and seasonal employment listings 24 hours daily. The Campus Interview program provides opportunities for students to meet with employers here at UCSB, especially during fall and winter quarters of each year. Internship opportunities (local, national and international) are available through the Applied Learning Program. For immediate access to employer listings, internship opportunities and workshop schedules as well as links to other resources visit the web site at career.ucsb.edu.

Graduate Programs

Departments at UCSB have specially appointed faculty members who are prepared to discuss their own graduate programs, specializations available, and admission requirements, including courses and majors required. They are often able to provide general information about other graduate schools in their areas of specialization.

All college advisors have a general knowledge of graduate school matters and can assist students in reviewing the options available to them. Two publications are very helpful to students searching for appropriate graduate programs: *Graduate School Admissions Manual*, a four-volume set published by the Educational Testing Service which identifies all graduate schools in the U.S. offering programs in each specific field of study, and *Peterson's Guides*, which are helpful in deciding which school is most suitable. Both the manual and *Peterson's Guides* are available in the Career Resources Room in Counseling and Career Services, Building 599. The Graduate Division, located in

Cheadle Hall 3117, can provide information and assistance to students who are interested in applying to graduate school at UCSB, including financial aid information.

Professional School Preparation

UC Santa Barbara has an excellent reputation for preparing its students for various professional school programs. Each year, many UCSB graduates continue their education in medical, law, business, and a variety of other professional schools. Most of these graduate professional programs do not require completion of a specific undergraduate major. Instead, students may complete the major of their choice while fulfilling any specific course prerequisites required for admission to the programs of interest to them. Advisors for each of these professional programs are available either in the Office of Student Academic Affairs in the College of Letters and Science or in departmental offices. Counseling and Career Services also maintains a wealth of information relevant to these career fields.

Medicine

Students who are preparing for careers in medicine have traditionally found UCSB an excellent institution in which to complete their requirements. Advising for premedical students is available in the Health Professions Resource Room, 2112 North Hall. There students can find information about required courses, recommended schedules, preparing for the Medical College Admissions Test, preparing for interviews, and health profession programs; peer advisors are available to assist students seeking information regarding health professions. Student groups, including the Health Professions Association, help to develop programs supporting the career aspirations of premedical students, and each year the campus sponsors a Health Professions Conference, where UCSB alumni discuss their medical careers and where representatives of medical schools provide information.

Many premedical students take advantage of the campus's wide range of opportunities to involve themselves in faculty-sponsored undergraduate research projects in the biomedical field, and many participate in the extensive internship programs available at local hospitals and medical clinics. The Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology sponsor both lower- and upper-division courses which are relevant to gaining experience in the medical field. The health professions advisor is available to help students develop academic programs to meet medical school requirements. The advisor also coordinates a series of workshops to help students prepare for the rigorous application process. The college also provides a special service for students, maintaining files containing letters of evaluation from faculty and work supervisors and forwarding these letters to medical schools. UCSB graduates are accepted into U.S. medical schools at a rate 30 to 50 percent higher than the national average.

Although many students select majors within the biological sciences, medical schools do not require applicants to complete a specific major. Schools, in fact, encourage applicants to develop a broad academic program with coursework in a variety of fields in the sciences, social sciences, and humanities. Each school, however, does require certain prerequisite courses, which invariably include the following:

- General Chemistry. Chemistry 1A-B-C and labs.
- Organic Chemistry. Chemistry 6A-B and either 107A-B-108 (preferred) or 130A-B-C.
- Introductory Biology. MCDB 1A-AL-B, EEMB 2-3-3L, and either MCDB 1BL or EEMB 2L.
- General Physics. Physics 6A-B-C and labs or 1-2-3-3L-4-4L.
- Mathematics. Mathematics 34A-B or Mathematics 3A-B and either Mathematics 3C or PSTAT 5A or another statistics course.
- English. Writing 2 or 2LK, one course from 50 or 50LK or 109AA-ZZ, and one additional writing or English literature course.

In addition, some schools require one year of upper-division coursework in the biological sciences. Students take courses in fields such as genetics (MCDB 101A-B or EEMB 129 and 130), developmental biology (MCDB 112), biochemistry (MCDB 108A-B-C or MCDB 110), and physiology (MCDB 111) to fulfill this requirement.

Medical schools prefer applicants with broad academic experience. Science majors, therefore, should take as many non-science courses as possible.

The overall grade-point average, particularly the grades earned in the prerequisites described above, will be a primary factor in determining the student's prospects for admission. Generally, at least a 3.3 grade-point average in the sciences and in all college work will be needed, although in recent years the average for accepted students nationally has been greater than 3.5. Scores on the Medical College Admission Test (MCAT) are also an important factor. Because competition is intense, interested students are encouraged to consult with the health professions advisor early in their academic careers, in order to plan their program carefully. Students also work with their advisor in preparing their applications and considering alternative careers should they be unsuccessful in gaining admission.

Other Doctoral-Level Health Professions

UCSB offers the advising and coursework necessary to complete the requirements for a variety of professional fields in health sciences. Although medicine is by far the most popular health field, many students pursue careers in other fields which require a doctoral degree. These professions include dentistry, podiatric medicine, optometry, physical therapy, veterinary medicine, and pharmacy. Although many of these professional school programs do not absolutely require a bachelor's degree, a large proportion of successful applicants will have completed this degree. Each of these fields (and the individual schools within the field) has specific course requirements which must be met before matriculating. Most require the same spectrum of courses which are outlined above for medical schools. The health professions advisor in the College of Letters and Science maintains a Health Professions Library which has additional information on other doctoral-level professions.

Allied Health Professions

Many students at UCSB are working to prepare for one of the allied health professions such as nursing, medical technology, or physician's assisting. Many of these do not require that students complete a bachelor's degree before entering the professional program. They all do, however, require that specific courses be completed before matriculation. Most of these courses are offered at UCSB. If the specific course is not part of the general UCSB curriculum, this campus has a general agreement with the Santa Barbara Community College allowing students to complete appropriate courses at SBCC while attending UCSB. In addition to course requirements, most of these fields also require that students obtain significant work or volunteer experience before entering professional school. The Santa Barbara community offers students many opportunities to gain that experience, often while gaining academic credit.

Counseling and Human Services

Students planning careers in one of the helping professions such as counseling psychology, health psychology, marriage and family counseling, educational psychology, social work, and industrial psychology may complete their undergraduate education at UCSB. No specific undergraduate major is required for most programs, but substantial coursework in the behavioral and social sciences is strongly recommended, and a course in statistics is often required. Some programs require applicants to take the Graduate Record Examination (GRE). Graduate professional programs in the counseling and human services area normally require one to two years of study.

Previous experience (volunteer or paid) in a human services setting is a requirement for most professional degree programs. Applicants to such programs are often asked to provide letters of recommendation from their supervisors. Additional information can be obtained from the Departments of Sociology and Psychology, from UCSB's Counseling and Career Services, from the Graduate School of Education, and from the pre-professional advisor in the College of Letters and Science.

Law

Undergraduates at UC Santa Barbara who are interested in preparing for a career in law will find numerous opportunities to build the strong record of academic achievement and personal accomplishment which is so important in the very competitive world of law-school admissions.

Each year, more than 400 UC Santa Barbara students apply to the nation's law schools, a figure which places this campus among the state's top five undergraduate institutions. The rate at which applicants are admitted to law schools consistently exceeds national averages. Many students attend law schools in California, and a smaller number choose to attend eastern

law schools. UC Santa Barbara graduates with superior academic records and scores on the Law School Admissions Test (LSAT) can expect to be admitted to the nation's very best law schools.

The combination of a strong and diverse liberal arts curriculum and an established network of advising and internship opportunities creates an intellectually engaging and supportive environment in which dedicated prelaw students pursue ambitious professional goals.

Students preparing for law school may select the major which holds the greatest degree of interest for them. Law schools seek to admit students with a broad academic background, demonstrated skills in analytical thinking and communication, and an academic record and score on the Law School Admissions Test which would predict success in law school. Competition for admission to the nation's most prestigious law schools is very keen.

The prelaw advisor in the College of Letters and Science assists students with major selection, program planning, selection of law schools, and applying for admission. The UCSB Association of Prelaw Students provides information and mutual support; it organizes law school tours for members and hosts the visits of law school representatives and local attorneys. In addition, the association publishes one of just a handful of undergraduate law reviews produced in the United States.

Management

Careers in management and business usually require postbaccalaureate training in professional or graduate schools, where admissions officers seek out students with a solid grounding in a wide variety of fields, particularly the social and behavioral sciences. Many UCSB students pursuing graduate education in management choose majors in economics or business economics. Graduate schools, however, do not require specific major programs, and students in majors across the curriculum build the foundation they will need for advanced training in specialties like international business, personnel management, hospital administration, arts management, banking and finance, marketing, operations research, accounting, labor and industrial relations, transportation and public utilities, and insurance.

Many schools have specific course prerequisites. These often include courses in accounting, micro- and macroeconomics, statistics, and mathematics. Students are advised to review the admission requirements of the programs of interest to them so that they can plan their undergraduate programs accordingly.

Most graduate schools of business require applicants to submit scores earned on the Graduate Management Admissions Test (GMAT). The UCSB Campus Learning Assistance Services (CLAS) offers preparation sessions for this examination. In addition, graduate schools of business generally seek applicants who have supplemented their academic pursuits with activities that have enabled them to develop and exercise their leadership potential and organizational skills. Many such activities are available at UCSB, including participation in student organizations and government and in one of the various internship programs sponsored by an academic department or by the UCSB Applied Learning Program. Full-time work experience is becoming increasingly important for admission to many schools of business; some of the most prestigious programs have initiated a process of deferred admission to ensure that students have the necessary work experience before they undertake graduate study. Interested students are invited to consult the college pre-professional advisor and the advisors in the Department of Economics. The *Official Guide to M.B.A. Programs, Admissions, and Careers*, available in many university and commercial bookstores, contains descriptions of more than 400 M.B.A. programs.

Teaching and Related Fields

The two first-level teaching credentials available in California are the Multiple Subject (elementary) and the Single Subject (secondary) credentials. Both require the prior completion of a bachelor's degree plus one academic year of graduate professional teacher education coursework and student teaching. The Graduate School of Education at UCSB offers these and several additional credential and graduate education programs.

Certain specific prerequisite courses are required for admission to these credential programs. A full description of prerequisites, and of the programs and options offered at UCSB, is contained in the *Letters and Science Guide to Undergraduate Studies*. Pre-credential students are encouraged to discuss their plans as soon as possible with the credential advisor in the Graduate School of Education, Teacher Education Program, Phelps Hall, room 2517.

Anthropology

**Department of Anthropology,
Division of Social Sciences,
Humanities and Social Sciences 2001;
Telephone (805) 893-2257**

Web site: www.anth.ucsb.edu

Department Chair: Francesca Bray

Faculty

Mark S. Aldenderfer, Ph.D., Pennsylvania State University, Professor (hunter-gatherers, Andean archaic, lithic analysis, quantitative methods)

Francesca Bray, Ph.D., Cambridge University, Professor (history and culture of medicine, technology and science, development, gender; East and Southeast Asia)

David A. Cleveland, Ph.D., University of Arizona, Associate Professor (agricultural development, sustainability, cultural and biological diversity, crop genetic resources and plant breeding, indigenous knowledge and intellectual property rights, demography, science and culture of development; West Africa, Southwest U.S., Southern Mexico)

Eve Darian-Smith, Ph.D., University of Chicago, Associate Professor (legal anthropology, European Community law, aboriginal land rights, nationalism; Europe, Australia)

Brian M. Fagan, Ph.D., Cambridge University, Professor (Old World archaeology, general prehistory, multimedia teaching)

Michael A. Glassow, Ph.D., UC Los Angeles, Professor (archaeology, cultural ecology, western North America)

Mary E. Hancock, Ph.D., University of Pennsylvania, Associate Professor (ideology and cultural practice in urban south India, symbolic anthropology, ritual constitution of gender and caste, political economy, social theory, nationalism, cultural studies, feminist theory)

Elvin Hatch, Ph.D., UC Los Angeles, Professor (history of anthropology, social history of rural America and New Zealand)

Michael Jochim, Ph.D., University of Michigan, Professor (archaeology, hunters-gatherers, European prehistory, archaeological method and theory)

Mattison Mines, Ph.D., Cornell University, Professor (social anthropology, South Asia, South Asian Muslims)

Juan Vicente Palerm, Ph.D., Universidad Iberoamericana, Professor (peasant studies, development)

Alexander F. Robertson, Ph.D., University of Edinburgh, Professor (social change and development, economic and political processes; Africa, Europe)

Katharina Schreiber, Ph.D., State University of New York, Binghamton, Professor (archaeology of Andean South America and the southwestern United States, origin and development of complex societies, empire expansion)

Stuart T. Smith, Ph.D., UC Los Angeles, Assistant Professor (archaeology of Egypt and Nubia [the Sudan], culture contact and imperialism, ideology and legitimization, funerary practice, ceramics and residue analysis)

Susan Stonich, Ph.D., University of Kentucky, Associate Professor (ecological anthropology, developmental anthropology, political economy, Latin America)

Donald Symons, Ph.D., UC Berkeley, Professor (physical anthropology, primate social behavior, the evolution of human behavior)

John Tooby, Ph.D., Harvard University, Professor (evolutionary psychology, hominid-behavioral evolution, behavioral ecology, evolutionary genetics)

Phillip L. Walker, Ph.D., University of Chicago, Professor (physical anthropology, osteology, primatology, human evolution)

Mayfair Yang, Ph.D., UC Berkeley, Professor (sociocultural anthropology, interpretive and social theory, political economy, China)

Emeriti Faculty

David W. Brokensha, D. Phil., Oxford University, Professor Emeritus (modernization, ecology, plural societies, Africa)

Donald E. Brown, Ph.D., Cornell University, Professor Emeritus (sociocultural anthropology, political anthropology, anthropology of history, Southeast Asia)

Manuel L. Carlos, Ph.D., UC Santa Barbara, Professor Emeritus (political anthropology, Latin America)

Napoleon Chagnon, Ph.D., University of Michigan, Professor Emeritus (social behavior, evolutionary theory, social structure, South American Indians)

Charles J. Erasmus, Ph.D., UC Berkeley, Professor Emeritus (development, explanation, collective good, Latin America)

Thomas G. Harding, Ph.D., University of Michigan, Professor Emeritus (economic anthropology, the Pacific)

William Madsen, Ph.D., UC Berkeley, Professor Emeritus (primitive religion, psychological anthropology, Mexico, addiction)

Barbara Voorhies, Ph.D., Yale University, Professor Emerita (archaeology, cultural ecology, Mesoamerica)

Affiliated Faculty

Leda Cosmides, Ph.D. (Psychology)

Barbara Harthorn, Ph.D. (Institute for Social, Behavioral, and Economic Research)

Jonathan X. Inda, Ph.D. (Chicano Studies)

Charles Li, Ph.D. (Linguistics)

Laury Oaks, Ph.D. (Women's Studies)

Thomas Scheff, Ph.D. (Sociology)

Georgia Fox, Ph.D. (Curator, Santa Barbara Maritime Museum)

Anthropology is the study of humans in the broadest sense: biological, sociocultural, and historical. Most undergraduates in anthropology at UCSB select this major because of the opportunity it affords them to acquire a sound liberal education, even if they do not intend to become anthropologists. However, the professionally oriented student will also find the curriculum fully suitable.

The aim of the anthropology major is threefold: (1) to prepare for graduate school those students who wish to work professionally in anthropology; (2) to prepare students for careers in secondary education or in social work; and (3) to provide a background in behavioral studies for students who desire a broad education in either the biological or the social sciences.

Students interested in cultural anthropology focus on ethnology and archaeology. Students interested in the study of human evolution and biological adaptation to the environment take physical anthropology. The course of study includes the sciences of biology and zoology.

Students may declare the major after completing two anthropology courses. An overall 2.0 grade-point average is required. All major courses must be completed on a letter-graded basis.

After completing specific prerequisites, students with a B.A. in anthropology are eligible to pursue a California Teaching Credential. The department recommends that students discuss this with the Graduate School of Education.

The Department of Anthropology's undergraduate staff advisor assists students regarding major requirements as well as other curriculum matters. The department also has a faculty advisor available for academic and career counseling and an Education Abroad Program advisor.

Students pursuing advanced degrees in anthropology should consult with the departmental graduate program assistant. A full discussion of the graduate program appears in the graduate program description, below.

Senior Honors Program

The senior honors program is designed to facilitate independent research on topics chosen by the student and pursued in particular depth. Qualified majors will be invited to participate in the honors program. Minimum qualifications are junior standing (completion of at least 105 units), completion of at least 20 upper-division units in anthropology, a grade-point average of at least 3.4, and two signatures of recommendation from instructors with whom the student has worked. Anthropology 104 and/or Anthropology 140RM are recommended, but not required, as preparation for the program.

Students may enter the program any quarter. Each candidate for honors enrolls in Anthropology 195A-B, taken in consecutive quarters, under the instruction of a thesis advisor chosen by the student. In Anthropology 195A, the student will concentrate on reading and gathering material for the thesis; in 195B, the student will write the thesis. The senior honors thesis will be retained permanently in the department office for faculty and students to read.

Anthropology students who complete the honors program, maintain grades of B or better in Anthropology 195A-B, and graduate with a minimum 3.4 grade-point average in the major will be awarded Distinction in the Major on university records and on the diploma.

College of Letters and Science Honors Program

Students enrolled in the College of Letters and Science Honors Program will be eligible to enroll in special honors discussion sections in most lower-division anthropology courses. See the department undergraduate advisor for more information.

Undergraduate Program

Bachelor of Arts—Anthropology—Cultural Emphasis

Preparation for the major. Anthropology 2, 3 or 3SS, and 5.

Upper-division major. Forty upper-division anthropology units are required. Students select 28 units from course offerings in areas I through V as indicated below. The twelve remaining upper-division units may be completed by taking any upper-division anthropology courses; including up to 8 units taken from the list, "Approved Studies in Related Disciplines" available from the department. Upper-division courses are 4 units. The yearly schedule of course offerings varies.

I. Method and Theory
(one course required)

A. Ethnology
104. Workshop: Reading, Writing, and Thinking
106. History of Anthropological Theory
109. Human Universals
113BF. Science and Society
115DS. Borderlands: Exploring Relations Between Place and Identity
140RM. Research Methods in Cultural Anthropology
143. Introduction to Contemporary Social Theory

Eve Darian-Smith

ASSOCIATE PROFESSOR, ANTHROPOLOGY

The world is messy and complicated," says associate professor Eve Darian-Smith, "and my role as a teacher is to provide a forum that forces students to think and question and recognize that the world can't be reduced to a right or wrong or black and white argument."

"My role as a teacher is to provide a forum that forces students to think and question and recognize that the world can't be reduced to a right or wrong or black and white argument."

Darian-Smith left a successful corporate law practice in Australia to study the field of legal anthropology and, more specifically, the cultural differences that form people's understanding of concepts we take for granted, such as law, justice, and morality.

Recognized for her excellence in teaching, Darian-Smith received the Social Science Teaching Award in 1998. She challenges her students to "open their eyes, think for themselves, and ask critical questions."

147. Understanding Cultural Differences
154. Special Topics in Social Anthropology
179. Seminar on the Anthropology of Symbolism
185DS. Capitalism and Racism

B. Archaeology
*100. Basic Archaeological Concepts
112Z. Theoretical Approaches in Contemporary Archaeology
132TS. Ceramic Analysis in Archaeology
163N. Analysis of Archaeological Materials
165. History of Archaeology
172H. Advanced Studies in Lithic Analysis
174. Spatial Analysis in Archaeology
*178. Kinship in Archaeological Record-Keeping and Collection
*181. Methods and Techniques of Field Archaeology
*182. Methods of Archaeological Analysis
182M. Introduction to Lithic Analysis
*183. Internship in Archaeological Resource Management
184. Settlement Pattern Analysis in Archaeology
*191. Laboratory Techniques in Archaeology
194. Field Training in Archaeology
194P. Practicum in Field and Laboratory Analysis

* These courses are strongly recommended for majors with an archaeology concentration.

II. Ethnology and Archaeology (two courses required)

A. Ethnology
107. Psychological Anthropology
114. Social Organization
115. Law and Warfare in Non-Western Societies
116. Myth, Ritual, and Symbol
116B. Anthropological Approaches to Religion
120. Production and Reproduction
121MS. Historical World Systems
125. Anthropology of Gender
126. East Asia: A Feminist Perspective
127. Hunters and Gatherers
138A. Elements of Traditional Chinese Culture
138B. Socialist Chinese Society
141DS. Maps-Museums-Malls: Visualizing Culture Differences
148MH. Aesthetic Anthropology
157. Medicine in Chinese
157L. Medical Anthropology
157R. Readings in Medical Anthropology
159. Urban Anthropology
161. Anthropology of Mass Media
170. Anthropological Approaches to Law
171. Economics of Primitive and Peasant Societies

B. Archaeology
101. African Archaeology
124. Archaeology of Trade and Seafaring
143F. Ethics in Archaeology
187. The Clash of Cultures
188. The Seacoast in Prehistory
196. Archaeology of Religion

III. Development, Ecology, and Social Change (one course required)

A. Ethnology
103. Human Population and the Environment
104H. People, Poverty, and Environment in Central America
110. Technology and Culture
111. Anthropology of Food
122. Anthropology of World Systems
130A-B-C. Third World: Environments and Prospects
141. Agriculture and Society in Mexico: Past and Present
146. Development Anthropology
149. Agriculture, Environment and Society
158. Crop Genetic Resources: Evolution, Use, and Conservation
160. Cultural Ecology
172. Colonialism and Culture
173. Nationalisms and the Nation State
185. Environmental Justice

B. Archaeology
162. Prehistoric Food Production
164. The Origins of Complex Societies
167. People of the Ice Age

IV. Ethnography and Culture History (two courses required)

A. Ethnology
131. North American Indians
132. Europe in a Global Context
134. Modern Cultures of Latin America
135. Modern Mexican Culture
136. Peoples and Cultures of the Pacific
140. Popular Culture in South Asia
142. Peoples and Cultures of India
142B. Contemporary Issues in South Asia
144. Peoples and Cultures of Southeast Asia
152. Anthropology of Europe
156. Understanding Africa
177. China through Film
186. Postcolonial Australia

B. Archaeology
118TS. Archaeology of Ancient Near East
130. Archaeology of South America
133. Cultural Development in Mesoamerica
137. The Ancient Maya
138TS. Archaeology of Egypt
150A. Archaeology of the Andean Preceramic
150B. Archaeology of Andean Civilizations
150C. Archaeology of the Inca Empire
155. Prehistory of California and the Great Basin
163. Archaeology of North America
175. Southwestern Archaeology
176TS. Ancient Egyptian Religion
189. Problems in European Prehistory

V. Physical Anthropology (one course required)

105. Human Variation
112. Bioarchaeology
121. Human Evolution
121T. Genetics, Natural Selection, and Human Evolution
151. Fossil Evidence for Human Evolution
151T. Evolutionary Psychology
153. Primate Behavior
153S. The Evolution of Human Sexuality
153T. Primate Behavioral Ecology
180A-B. Faunal Analysis

Bachelor of Arts—Anthropology—Physical Emphasis

Preparation for the major. Anthropology 2, 3 or 3SS, 5, 7; MCDB 25 and 25L or EEMB 25 and 25L. Recommended: MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L

Upper-division major. Forty units of upper-division anthropology courses. Students must complete Anthropology 105 and 12 additional units in physical anthropology courses from 112, 121, 121T, 151, 151T, 153, 153S, 153T, 180A-B; and 24 units of upper-division courses. Twelve of these units may be completed on subjects related to physical anthropology.

Minor—Anthropology

Up to 5 upper-division anthropology units may be taken on a P/NP basis. All other courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in the Department of Anthropology and those offered by other departments and applied to the minor.

Preparation for the minor. Anthropology 2, 3 or 3SS, and 5.

Upper-division minor. Eighteen units of upper-division anthropology coursework. Students are strongly encouraged to discuss course selection with the undergraduate faculty advisor.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

Three specializations are offered in the combined M.A./Ph.D. program in anthropology: archaeology, biosocial anthropology, and sociocultural anthropology. Further specialization is possible within each of these fields. The department offers a terminal M.A. program in anthropology with a specialization in archaeology for students whose career objectives require only a master's degree. A complete statement of degree requirements and policies is available from the department.

In addition to fulfilling the departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Applicants must hold a bachelor's degree in anthropology or a related field. Except for the terminal M.A. degree program (archaeology specialization only), the department normally admits only those applicants whose ultimate degree objective is the Ph.D. The ultimate degree objective as well as the desired specialization must be indicated on the application.

Applicants will be admitted for the fall quarter only; the application deadline for students seeking merit-based financial support is December 15; other applications will be accepted until January 15.

Applicants to the Ph.D. in anthropology must hold an M.A. in anthropology or its equivalent. Students who have received the UCSB M.A. (leading to the Ph.D.) must have approval of the faculty in their specialization to

continue to the Ph.D. Students who have successfully completed the terminal UCSB M.A. program (archaeology specialization only) must apply to the Ph.D. program and compete for admission with all other applicants for that year.

Interdepartmental Graduate Program in Marine Science. The Department of Anthropology participates in the program for students with biology backgrounds and interests in marine coastal and environmental policy.

Master of Arts—Anthropology

Degree Requirements

All M.A. students are required to complete a course of study as defined in a contract determined by the student in consultation with a three-member master's committee. The contract is specially tailored to each student's needs. It should be finalized and approved by the winter quarter, but no later than the end of spring quarter of the first year. Satisfactory progress toward the degree is required. Students complete three courses per quarter and all general requirements according to the published deadlines. Students who are appointed as teaching assistants will normally be enrolled in a teaching practicum course and two academic courses.

The M.A. degree leading to the Ph.D. is awarded upon satisfactory completion of a minimum of 36 units of coursework and the fulfillment of the following requirements: students in archaeology and biosocial anthropology take a comprehensive exam in the spring quarter of the second year; students in sociocultural anthropology take a first-year assessment examination just before the beginning of their second fall quarter, and at the end of the second year must submit an M.A. dossier that includes a draft research proposal. The terminal M.A., archaeology specialization, is awarded upon satisfactory completion of a minimum of 32 units of coursework, a comprehensive examination and a thesis.

Master of Arts—Anthropology, Archaeology Specialization

Subspecializations offered for the M.A. leading to the Ph.D. include North American, South American, and European archaeology. The terminal M.A. program has a subspecialization of North American archaeology only. Students opting for the North American archaeology subspecialization in either M.A. program may further specialize in human osteology and faunal analysis through a link with the department's bioarchaeology subspecialization.

A series of core courses must be taken during the first two years. The comprehensive examination, offered in the spring quarter of the second year, covers general anthropology and method and theory in archaeology. During the second year, the student begins work on an article-length research paper on a topic selected in consultation with the master's committee. The paper is submitted and approved in the fall quarter of the third year.

Students in the terminal M.A. program form a thesis committee toward the end of the winter quarter of first year of study, and, in consultation with the committee, formulate a thesis topic during the second year of study. The thesis, based on original research in North American archaeology, must be completed and approved no later than the end of the third year after entering the program.

Master of Arts—Anthropology, Biosocial Anthropology Specialization

During the first year, students take a series of core courses and relevant additional courses in anthropology and other departments, as determined in consultation with biosocial faculty and an assigned faculty advisor. By early winter quarter of the first year, each student selects a master's committee of three faculty who will assist with determining a specific course of study for his or her contract. The contract shall be submitted by the end of spring quarter of the first year. During the second year, the student begins work on an article-length research paper on a topic chosen in consultation with the M.A. committee. The paper is submitted and approved in the fall quarter of the third year.

The comprehensive examination taken spring quarter of the second year covers the general field of anthropology, biological anthropology, and the student's chosen areas of specialization.

Master of Arts—Anthropology, Sociocultural Anthropology Specialization

By the end of winter quarter of the first year, each student selects a master's committee of three faculty who will assist the student with determining a specific course of study for his or her contract. Students are expected to make up deficiencies in preparation during the first year.

There are five compulsory core courses for the M.A. The first-year assessment examination covers the contents of three first-year core courses on anthropological theory; second-year students take two core courses in research design and methods that prepare them for writing the draft research proposal for their M.A. dossier.

Doctor of Philosophy—Anthropology

Degree Requirements

Students who have received their M.A. degree from another institution must demonstrate that they also meet the UCSB M.A. requirements, and may be asked to complete courses and/or pass the appropriate comprehensive or assessment examination before admission to the Ph.D. program.

The department offers the specializations of archaeology, biosocial anthropology, and sociocultural anthropology toward the Ph.D. in anthropology. Further specialization within these fields is possible.

Students complete a course of study as determined in consultation with their committees. To advance to candidacy for the doctorate, students must: (1) satisfy all requirements in their fields; (2) form a dissertation committee; (3) gain approval of their dissertation proposal; and (4) pass an oral qualifying examination. Students in the archaeology and biosocial specializations must complete the research paper (see above). Students in the sociocultural specialization must complete two literature review papers in their third year. One literature review paper addresses the theoretical issues of the student's research specialization. The second reviews literature on the region, culture and history of the people to be studied. Upon completion of these requirements students may petition for advancement to candidacy.

Students who have received their M.A. in another institution generally submit the dissertation proposal during their second year at UCSB. Students in the UCSB combined M.A./Ph.D. program submit their dissertation proposals by the end of their third year of study. Dissertation proposals are normally submitted to a funding agency such as the National Science Foundation.

Three quarters of dissertation research are required of all students for the degree. The dissertation must be approved by all members of the dissertation committee.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in anthropology, art history, English, French, German, history, religious studies, or sociology. Anthropology students pursuing the emphasis in women's studies must complete four graduate courses for the emphasis requirements in addition to the course requirements for anthropology; only one of the four required courses may be taken in the anthropology department. These additional courses include Women's Studies 270 (Feminist Epistemology), Women's Studies 280 (Research Seminar), a feminist theory course selected from the list of the program's approved electives, and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program (either as one of the three required department members or as an additional, fourth appointee). Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Anthropology Courses

LOWER DIVISION

Note: Freshman seminars are offered on an irregular basis.

2. Introductory Cultural Anthropology
(4) STAFF

The nature of culture: survey of the range of cultural phenomena, including material culture, social organization, religion, and other topics.

3. Introduction to Archaeology
(5) FAGAN

An introduction to archaeology and the prehistory of humankind from the earliest times up to the advent of literate civilization and cities, also processes of cultural change. Partly self-paced learning.

3SS. Introduction to Archaeology
(4) STAFF

This course consists of an introduction to the basic principles and techniques of archaeological science followed by a thematic discussion of the major events of the history of humankind from our earliest origins to the appearance of civilization.

5. Introductory Physical Anthropology
(4) SYMONS

Human evolution: evolutionary theory, basic genetical concepts, primate evolution and behavior, fossil man, evolution of human behavior and mind.

7. Introductory Biosocial Anthropology
(4) TOOBY

An introduction to our evolved, universal human nature, the evolution of the human mind, and how they shape behavior, social life, and culture. Topics include friendship, mate choice, incest avoidance, cooperation, revenge, status, jealousy, emotions, group formation, and intergroup aggression.

99. Independent Studies
(1-4) STAFF

Prerequisite: consent of instructor.

Must have an overall grade point average of 3.0. May be taken for a maximum of four units of Anthropology 99 per quarter, and can be repeated for a maximum of eight units. Students are limited to five units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Introduction to research in Anthropology. Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research or work in a research group.

UPPER DIVISION

100. Basic Archaeological Concepts
(4) JOCHIM

Prerequisite: Anthropology 3 or 3SS.

A survey of important archaeological methods of excavation, analysis, and interpretation. Focus will be on the problems and promise of various approaches to the explanation of past human behavior.

101. African Archaeology
(4) FAGAN

Prerequisite: Anthropology 3 or 3SS.

An analysis of the archaeology of Africa from 10,000 years ago to AD 1500, with special reference to the emergence of food production, indigenous states, and the development of long distance trade. Major emphasis on self-paced learning.

102A-B. Women, Culture and Development
(4) HANCOCK, BHAVNANI

Prerequisite: upper-division standing.

Same course as Sociology 156A-B and Global Studies 180A-B..

Critical examination of the interrelationships between women, culture, and development. Topics include colonialism, violence, globalization and the state, health and reproduction, religion and nationalism, sustainable development, biotechnology, representation and resistance movements.

103. Human Population and the Environment
(4) CLEVELAND

Prerequisites: Environmental Studies 1 or Anthropology 2; and, Environmental Studies 3 or Anthropology 5 or MCDB 5B-BL or EEMB 5B-BL.

Same course as Environmental Studies 103.

The growth and current status of human population around the world, emphasizing sociocultural and biophysical environments. Topics include theories, ideologies, and implementation strategies of population programs; nutrition and agriculture; basic demographic tools; human and reproductive rights; policy options for the future.

104. Workshop: Reading, Writing, and Thinking
(4) ROBERTSON

Prerequisite: sophomore or junior standing; consent of instructor.

This workshop for sophomores and juniors intending to major in Anthropology develops an understanding of anthropological texts, and the skills necessary to undertake such projects as the undergraduate honors dissertation.

104H. People, Poverty, and Environment in Central America
(4) STONICH

Prerequisite: Anthropology 2 or Environmental Studies 1 or 3.

Same course as Environmental Studies 104.

Analysis of the interrelated social, demographic, economic, political, and environmental crises occurring in Central America from an anthropological perspective. Emphasis on the evolution of contemporary problems, current conditions, and future prospects for the region.

105. Human Variation
(4) WALKER

Prerequisite: Anthropology 5 or MCDB 20 or EEMB 20.

An examination of traditional race concepts contrasted with an approach to human variation through the analysis of biologically adaptive traits.

106. History of Anthropological Theory
(4) HATCH

Prerequisite: Anthropology 2.

An account of the intellectual traditions of anthropology, the main figures who shaped these traditions, and the issues that both divided and united anthropologists at different periods of time.

107. Psychological Anthropology
(4) TOOBY

Field from Freud and Mead to present; how human nature (universal psychological mechanisms) and culture interact to form individual psychologies, identities, genders, social attitudes, worldviews, and traditions; how cognitive development shapes belief systems, reasoning and symbolism; emotions, preferences, thinking, and pathologies in a cross-cultural perspective.

109. Human Universals
(4) STAFF

A critical overview of those characteristics of human psyche, behavior, society, and culture that are allegedly found among all peoples: the constants of human nature.

110. Technology and Culture
(4) BRAY

Prerequisite: Anthropology 2.

Theories of technological evolution and innovation. Meanings of technology. The social and cultural impact of technology on our everyday lives, including automobile culture, industrial farming, the telephone, and technologies of the body.

111. The Anthropology of Food
(4) BRAY

Prerequisite: upper-division standing.

Critical survey of different anthropological approaches of food production and consumption: biological implications of diet; relations between agricultural forms and political systems; the meanings of feasting; cooking, class and gender; food and national identity.

112. Bioarchaeology
(4) WALKER

Prerequisite: Anthropology 180A.

A survey of research in the field of bioarchaeology including studies of paleodemography, paleopathology and their relevance to testing about the biological and cultural adaptations of earlier human populations and interpreting behavior from the human skeleton.

112Z. Theoretical Approaches in Contemporary Archaeology
(4) ALDENDERFER

Prerequisite: Anthropology 3 or 3SS or 100.

Students will be introduced to the major theoretical approaches in contemporary archaeology, including neo-evolutionist, Marxist, symbolic/structuralist, critical, and neo-Darwinian thinking. The goal of the course is to show how theory serves as a guide to research.

113BF. Science and Society
(4) BRAY

Prerequisite: upper-division standing.

Anthropological analysis of scientific institutions and the process by which scientific knowledge is produced (e.g. lab culture); cultural dimensions of scientific thought; science, nationalism, power and money; the consumption of science.

114. Social Organization
(4) MINES

Emphasis on various theories of social structure and social organization in cross-cultural perspective; kinship, social stratification, and ethnicity.

11S. Law and Warfare in Nonwestern Societies
(4) STAFF

The nature of law and warfare in nonwestern societies. Analysis of the strategy and tactics of conflict resolution in relation to ecological, economic, and political aspects of life in nonwestern societies.

11SDS. Borderlands: Exploring Relations Between Place and Identity
(4) DARIAN-SMITH

Prerequisite: upper-division standing.

Through case studies in Europe, Australia, the United States and Latin America, exploration of concepts of citizenship immigration, nationalism, and ethnic identity at the borders and regions of integration and conflict between states and within states.

116. Myth, Ritual, and Symbol
(4) HANCOCK

Prerequisite: Anthropology 2.

Uses ethnographic case studies, films and performance videos to explore myth, ritual, and symbolism cross-culturally. Compares and contrasts the symbolic dimensions of gender and ethnic identity, world view, social and political organization in different societies.

116B. Anthropological Approaches to Religion
(4) HANCOCK

Prerequisites: Anthropology 116; upper-division standing.

Exploration of anthropology's distinctive approaches to religion using theoretical works, historical and ethnographic case studies, film, and performance video. Topics include sociopolitical dimensions of religion; ritual structure, and experience; cognitive, aesthetic, and semiotic approaches to religion.

117Y. Modernity and East Asia
(4) YANG

Focus on modern China, Japan, Korea: 1. evolutionism, nationalism, and the discourse of race; 2. gender, marriage, and sexuality; 3. the modern state; 4. the invention and destruction of "tradition"; 5. urbanization and consumer culture; and, 6. feminist movements.

118TS. Archaeology of the Ancient Near East
(4) SMITH

Prerequisite: Anthropology 3 or 3SS or INEST 45.

This course combines archaeology and history to trace the development of the cultures of the ancient Near East from the origins of civilization through the rise of empires, ending with the conquest of Alexander the Great in c. 300 BCE.

120. Production and Reproduction
(4) ROBERTSON

Prerequisite: Anthropology 2.

Exploration of the relationship between family processes and changing economic structure in tribal, peasant, and industrial societies. How the production of people depends on the reproduction of economic relationships, and how economic production is influenced by human reproduction.

121. Human Evolution
(4) WALKER

Prerequisite: Anthropology 5.

The nature and results of the evolutionary

processes responsible for the formation and differentiation of human populations.

121MS. Historical World Systems
(4) MINES, SMITH

Prerequisite: upper-division standing.

Same course as Global Studies 121.

Eurasian systems of trade pre-1825: the major trade systems, modes of production, cultures of banking, credit and trust, early expressions of identity, ethnicity and knowledge of others, trade's impact in the pre-industrial world: distribution of wealth, knowledge, and power.

121T. Genetics, Natural Selection, and Human Evolution
(4) TOOBY

Prerequisite: upper-division standing.

An introduction to the nature and role of genes in evolution, in natural selection, in sexual reproduction, in cellular regulation, in human development, in structuring universal human adaptive design, and in creating individual and intergroup similarities and differences.

122. Anthropology of World Systems
(4) STAFF

Focuses on the penetration and impact of global capitalist economy (national and multinational) upon local level third world societies, communities, and groups. A world system perspective is taken and anthropological case studies are presented from Asia, Africa, and Latin America.

124. Archaeology of Trade and Seafaring
(4) FAGAN

Prerequisite: Anthropology 3 or 3SS.

Survey of prehistoric trade and exchange with special reference to ancient seafaring. Case studies focus on the Indian Ocean area, the Mediterranean world, and the relationship between southeast Asia and the Pacific.

125. Anthropology of Gender
(4) YANG

Prerequisite: not open to freshmen.

Same course as Sociology 155AG.

The cross-cultural study of gender from a feminist perspective. Topics may include gender and nature, gender and the division of labor, gender and kinship, gender and subjectivity, gender and sexuality, gender and the state, gender and knowledge/discourse.

126. East Asia: A Feminist Perspective
(4) BRAY

Culture and institutions of China, Korea, and Japan viewed from the perspective of women's experiences. Implications of East Asian constructions of gender for the organization of family and state and for the challenges of modernization.

127. Hunters and Gatherers
(4) JOCHIM

Prerequisite: Anthropology 2.

What do Pygmies, Aborigines, and Eskimos have in common? What is the relationship between nature and culture in these simple societies? These questions and other will be examined through case studies and cross-cultural comparisons.

130. Archaeology of South America
(4) SCHREIBER

Prerequisites: Anthropology 3 or 3SS; and Anthropology 100.

A survey of the Andean region, tracing the rise of civilization from early hunter-gatherers to the impressive Inca Empire. Emphasis is placed on the archaeological basis for interpretations of such major cultures as Chavin, Nasca, Moche, Wari, and Tiwanaku.

130A. Third World Environments: Problems and Prospects
(4) STONICH

Prerequisite: Anthropology 2 or Environmental Studies 1 or 3.

Same course as Environmental Studies 130A.

Examination of the human dimensions of globalization/global environmental change from the Third World. Emphasis on the sociocultural context of environmental destruction, environmental justice and interdisciplinary approaches.

130B. Third World Environments: Conservation and Sustainable Development
(4) STONICH

Prerequisites: Anthropology 130A or Environmental Studies 130A; not open to freshmen.

Same course as Environmental Studies 130B.

Focus on conservation and sustainable development. Includes examination of contending views of sustainable development. Special emphasis on tourism, agricultural, fisheries and aqua-cultural development in the Third World.

130C. Third World Environments: Response and Resistance
(4) STONICH

Prerequisites: Environmental Studies 130A-B or Anthropology 130A-B.

Same course as Environmental Studies 130C.

Concerned with response and resistance to economic globalization, impoverishment, and environmental degradation: household economic strategies; migration, urbanization; social conflict; environmental movements of the poor; the information revolution; and alternative development strategies.

131. North American Indians
(4) GLASSOW

The origins, development, and attainments of New World aboriginal cultures north of Mexico. Some emphasis is given to California groups such as the Chumash.

132. Europe in a Global Context
(4) DARIAN-SMITH

Prerequisite: upper-division standing.

This seminar approaches Europe as an idea. Through historical and contemporary materials, we will explore perspectives that both affirm and challenge notions of Europe as a cohesive geo-political and cultural entity, and relate these to today's European Union.

132TS. Ceramic Analysis in Archaeology
(4) SMITH

Prerequisite: Anthropology 3 or 3SS.

An overview of how ceramics are used in archaeology. Topics include pottery manufacture, classification, stylistic and functional analysis, scientific analysis, chronology, production and exchange, ceramic consumption and socio-political organization.

133. Cultural Development in Mesoamerica
(4) STAFF

Prerequisites: Anthropology 3 or 3SS; and Anthropology 100.

The rise and fall of various ancient civilizations such as those of the Maya, Aztecs, Toltecs, Teotihuacanos, and Olmec as well as their cultural antecedents. This course uses self-paced audiovisual modules as well as traditional lecture format. (Offered periodically.)

134. Modern Cultures of Latin America
(4) STAFF

Continuities and changes in the contemporary cultures of peasant and urban societies in Mexico, Central, and South America. Examination of cultural institutions and values, social stratification, village and urban life, elites, urbanization.

135. Modern Mexican Culture
(4) STAFF

The impact of dependency, industrialization, urbanization, technology, and modern communications on Mexican society in the twentieth century. Examination of recent sociocultural contemporary urban and rural communities, class structure, value orientations, ethnic minorities, and national integration.

136. Peoples and Cultures of the Pacific
(4) STAFF

The aboriginal and modern cultures of Polynesia, Melanesia, and Micronesia.

137. The Ancient Maya
(4) ALDENDERFER

The splendiferous Maya civilization as it waxed and waned during ancient times. This course uses self-paced audiovisual modules as well as the traditional lecture format.

138A. Elements of Traditional Chinese Culture
(4) YANG

Prerequisite: Not open to freshmen.

Same course as Sociology 130CC.

An exploration of cultural, historical, and political elements in ancient and late imperial China which are relevant in understanding modern society in socialist China and Taiwan today. Emphasis given to the cultural tradition of the state.

138B. Socialist Chinese Society
(4) YANG

Prerequisite: Not open to freshmen.

Same course as Sociology 130CS.

An analysis of social, cultural, economic, and political patterns in the People's Republic of China, emphasizing the diverse changes instituted after the Revolution, as well as the new directions the society has taken since the economic reforms of the 1980's.

138TS. Archaeology of Egypt
(4) SMITH

Prerequisite: upper-division standing.

Selected topics on the archaeology of ancient Egypt, placing the monuments of this great civilization in the context of its rise and development. Emphasis on ancient Egyptian material culture as a source for understanding Egyptian political, social, and economic dynamics.

138UA. Underwater Archaeology
(4) FOX

Examines the basic principles of underwater archaeology. Underwater sites include shipwrecks, sunken harbors, prehistoric settlements, and other submerged sites. Covers mapping and surveying techniques, preservation of artifacts, and relevance to the field of anthropology.

140. Popular Culture in South Asia
(4) STAFF

Prerequisite: Anthropology 142.

A seminar on contemporary social and cultural issues in South Asia. Readings on popular religion, communalism, mass media, commercial culture, and the middle class.

140RM. Research Methods in Cultural Anthropology
(4) STONICH

Prerequisite: Anthropology 2.

Introduction to basic research methods in social and cultural anthropology. Focus on the role of fieldwork, preparation for field research, data collection, management, and analysis.

141. Agriculture and Society in Mexico: Past and Present
(4) PALERM

The evolution of rural Mexico: from origins of Mesoamerican agriculture to the rise of high civilization; from the establishment of the colonial system to the demise of colonial agricultural institutions; from the revolution of 1910 to the enactment of land reform and development programs. Emphasis will be made on the role of peasantry in the making of the modern state.

141DS. Maps-Museums-Malls: Visualizing Culture Difference
(4) DARIAN-SMITH

Prerequisite: upper-division standing.

Exploration of the ways cultural differences are manifested visually. A look at early maps and scientific discoveries, museums which classify representations of exotic peoples, and contemporary shopping malls in order to analyze fashion, architecture and advertising.

142. Peoples and Cultures of India
(4) MINES

Rise of Indian civilization from prehistoric times to the present; regional divisions of India; family, kin, caste groups, and village life; social organization above village level; effects of urbanization, British rule, and independence.

142B. Contemporary Issues in South Asia
(4) HANCOCK

Prerequisite: Anthropology 142.

Uses film, novels, ethnographies and popular journalism to explore a variety of issues in post-independence South Asia. Topics such as environmental feminist, and human rights movements; communalism; mass media; South Asian diaspora, youth culture; and development may be covered.

143. Introduction to Contemporary Social Theory
(4) DARIAN-SMITH

Prerequisite: upper-division standing.

Introduction to the main themes and concerns that preoccupy contemporary social theorists. The underlying purpose is to stress the importance of social theory in providing insights and posing questions critical for informed and innovative research in the social sciences.

143F. Ethics in Archaeology
(4) FAGAN

Prerequisite: Anthropology 3 or 3SS.

An analysis of ethics in contemporary archaeology. Topics include reburial and repatriation, interpretation of the archaeological record in the context of historically oppressed groups, ethnic minorities, and non-western societies. The course also includes the ethics of collecting and managing cultural property.

144. Peoples and Cultures of Southeast Asia
(4) STAFF

Drawing materials from Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia, and the Philippines, this course is organized around the concept of the corporation as a tool for the comparative analysis of society. (Normally taught every other year.)

146. Development Anthropology
(4) ROBERTSON

Prerequisite: upper-division standing.

An introduction to the planning of economic development in the "Third World" and its social consequences from the perspective of anthropology.

147. Understanding Cultural Differences
(4) HATCH

The differences among human societies are enormous, and the question of how to account for this diversity is a key problem for anthropology. This course presents the main points of view for explaining how peoples differ in cultural beliefs and behavior.

148A. Comparative Ethnicity
(4) STAFF

Prerequisite: Anthropology 2 or 5.

A cross-cultural examination of the part that ethnicity and race play in human affairs.

148MH. Aesthetic Anthropology
(4) HANCOCK

Prerequisite: Anthropology 2 or 116.

Contrasts different forms of artistic production and criticism in a range of societies. Considers how art and aesthetics are defined in cultural context; investigates political, economic and socio-cultural dimensions of aesthetic practice, including visual arts, music performance, body art.

149. Agriculture, Environment and Society
(4) CLEVELAND

Prerequisites: Environmental Studies 1 or 3 or Anthropology 5.

Same course as Environmental Studies 149.

The evolution of agriculture and current problems of agricultural development, emphasizing sociocultural and biophysical environments. Topics include theories, ideologies, and implementation strategies of agricultural development; households and women; irrigation; crop genetics resources and biotechnology; integrating indigenous and modern scientific knowledge.

150A. The Archaeology of the Andean Preceramic
(4) ALDENDERFER

Prerequisite: Anthropology 3 or 3SS or 5.

A survey of the early cultures of the Andean region, with a focus on the early occupation of South America, the domestication of indigenous plant and animal species, and the origins of social complexity of inequality.

150B. Archaeology of Andean Civilizations
(4) SCHREIBER

Prerequisite: Anthropology 100.

A survey of the prehistory of Andean South America beginning with the complex cultures of the Initial Period and ending with an overview of the Inca Empire. Major cultures include Chavin, Nasca, Moche, Wari and Tiwanaku.

150C. The Inca Empire
(4) SCHREIBER

Prerequisite: Anthropology 3 or 3SS.

Not open for credit to students who have completed Anthropology 150.

An in-depth study of the fabled Inca Empire of South America, including archaeological and historic sources. Topics include Inca origins, political organization, economy, and social structure.

151. Fossil Evidence for Human Evolution
(4) WALKER

Recommended preparation: Anthropology 5 and 121.

Presentation and discussion of the fossil evidence for human evolution. Various interpretations will be discussed in light of the evolutionary theory and intellectual climate prevalent at the time of formulation.

151T. Evolutionary Psychology
(4) TOOBY

Prerequisite: Anthropology 2 or 3 or 3SS or 5 or Psychology 1.

A critical survey of the emerging field of evolutionary psychology, covering specific cognitive adaptations involved in mate choice, incest avoidance, cooperation, love, revenge, jealousy, and individual and intergroup aggression, and also analyzing how such evolved species-typical mechanisms generate human culture.

152. Anthropology of Europe
(4) DARIAN-SMITH

Prerequisite: upper-division standing.

Examination of the changing nature of culture and politics in contemporary Europe. Topics include the cultures of nationalism, regionalism, separatism, ethnic conflict, immigration, historical memory in the construction of national identities, and the cultural politics of European integration.

153. Seminar on Primate and Human Sexual Behavior
(4) BROWN, SYMONS

Prerequisite: consent of instructor.

A critical examination of the nature and determinants of human sexuality, emphasizing evolutionary and cross-cultural approaches.

153S. The Evolution of Human Sexuality
(4) SYMONS

Recommended preparation: Anthropology 5 or 7.

Exploration of the psychological mechanisms—adaptations—that underpin human sexual feeling, thought, and action. Emphasis on male-female differences, "engineering" analyses, and the comparative method as sources of information about adaptive design. Includes the study of sexual arousal, attractiveness, jealousy, and competition.

153T. Primate Behavior
(4) TOOBY

Prerequisite: upper-division standing.

An introduction to primatology and the principles of behavioral ecology, using langur, vervet, macaque, baboon, gorilla, and chimpanzee field studies to illustrate theories of foraging, parenting, kinship, sexual selection, incest avoidance, aggression, and dominance. Concludes with applications to human evolution.

154. Special Topics in Social Anthropology
(4) STAFF

Designed for students who intend to do graduate work in social or behavioral sciences. May be repeated for credit to a maximum of 8 units.

A critical review of selected theoretical and methodological contributions of social anthropology to the description, analysis, and comparison of human societies. (Normally taught every other year.)

155. Prehistory of California and the Great Basin
(4) GLASSOW

Prerequisite: upper-division standing.

A survey of the prehistory of California and the Great Basin, which includes principally the states of Nevada and Utah. Consideration is also given to how archaeologists construct regional cultural developments and attempt to explain prehistoric cultural change.

156. Understanding Africa
(4) ROBERTSON

Prerequisite: upper-division standing.

A general introduction to the peoples of Africa: their histories, economies, political systems, and cultures. How should we, as outsiders, understand the diversity of this great continent, its human problems, and its significance in the modern world?

157. Medicine in Chinese Culture
(4) BRAY

Prerequisite: Anthropology 2.

Survey of concepts of the body and of healing techniques in China drawing on theories from medical anthropology, cultural history, and gender studies. The political economy of health in contemporary China. Medical representations and choices in a pluralist system.

157L. Medical Anthropology: Cultural Perspectives on Health and Therapeutics
(4) STAFF

This course considers non-western medical systems as well as the cultural practices of western biomedicine as cultural systems, each with their own patterns of knowledge and power, understandings of efficacy and well-being, ideological constructs, and therapeutic literal practices.

157R. Readings in Medical Anthropology
(4) STAFF

Prerequisite: Anthropology 157.

Undergraduate seminar focusing on book-length classic and contemporary texts in medical anthropology.

158. Crop Genetic Resources: Evolution, Use, and Conservation
(4) CLEVELAND

Prerequisites: Environmental Studies 1 or 3 or Anthropology 2; and, EEMB 5B or 20 or Anthropology 5.

Same course as Environmental Studies 158ES.

Domestication and varietal diversification of crops, their current use in small-scale, traditionally-based, and modern industrial agriculture, and their conservation in farmers' fields and genebanks; including case studies of crops and farming systems.

159. Urban Anthropology
(4) STAFF

Cultural and psychic adaptation to urban agglomeration from the earliest cities, with emphasis on Asian, African, European, and modern American cities, to the present-day megalopolis.

160. Cultural Ecology
(4) JOCHIM

Prerequisite: Anthropology 2.

Ranging from moose hunters to rice farmers, cultures seem tremendously diverse, yet cultural forms do show clear patterns. The relationship of these patterns to the natural and social environment will be examined.

161. Anthropology of Mass Media
(4) STAFF

Exploration of the role of mass media in cultural processes of modernity in societies around the world. Topics include: transnational cultural processes,

cultural imperialism, media and consumer culture, media and the imagination, ethnography of mass media.

162. Prehistoric Food Production
(4) STAFF
Prerequisite: Anthropology 3 or 3SS.
A history of the process of plant and animal domestication in the Americas, the Near East, Asia, and Africa. Course focuses on the specific biological changes in the major domesticates as well as associated social changes in human life.

163. Archaeology of North America
(4) ALDENDERFER
A survey of North American archaeology exclusive of Mesoamerica. Changes in prehistoric lifeways from simple hunting and gathering to complex agriculturally based chiefdoms will be explored through the study of the development of regional traditions over long periods of time.

163N. Analysis of Archaeological Materials
(4) GLASSOW
Prerequisite: Anthropology 3 or 3SS.
An advanced applied course focused on the generation of analytically meaningful data from archaeological collections obtained from prehistoric sites in the Santa Barbara Channel region. Topics covered are research design, collections processing, data recording, and simple statistical analysis and interpretation.

164. The Origins of Complex Societies
(4) SCHREIBER
Prerequisite: Anthropology 3 or 3SS.
Why and how complex societies developed from simple, egalitarian societies in some areas of the world. Course surveys major theories and evidence surrounding the origins of states and urban societies in New and Old World.

165. History of Archaeology
(4) FAGAN
Prerequisite: Anthropology 3 or 3SS.
A survey of the history of archaeology from Medieval times to 1960, with special reference to the changing intellectual contexts of the field. Emphasis on emerging major theoretical approaches and the impact of important discoveries.

167. People of the Ice Age
(4) FAGAN, JOCHIM
Prerequisite: Anthropology 3 or 3SS.
Human adaptations and population dispersals during the Ice Age (Pleistocene epoch). Course focuses on the nature of Stone Age cultures and the evidence for early human occupation of the Americas and the Old World between three million and 10,000 years ago.

170. Anthropological Approaches to Law
(4) DARIAN-SMITH
Prerequisite: upper-division standing.
Critical review of legal anthropology. Emphasis upon theoretical developments from classical to contemporary perspectives and their relationship to ethnographic analyses. Topics include non-western legal systems, (post)colonialism, nationalism, and the implication of law in constructions of race, class, and gender.

171. Economics of Primitive and Peasant Societies
(4) MINES
Economic life of pre-market societies and the social consequences of their involvement in a money economy.

172. Colonialism and Culture
(4) HANCOCK
Prerequisite: upper-division standing.
Historical and sociocultural processes of colonialism and postcolonialism in selected societies. Topics include: relations between colonialism and capitalism; rise of nationalism; race and sexuality; cultural dimensions of and resistance to colonialism; modernization and development regimes; postcolonial critique.

172H. Advanced Studies in Lithic Analysis
(4) ALDENDERFER
Prerequisite: Anthropology 3 or 3SS.
Students are introduced to the major analytical techniques for chipped stone tool analysis. Experience in the design and execution of research into the anthropological meaning of stone tools is emphasized. Special attention is devoted to gaining experience in microwear techniques.

173. Nationalism and the Nation-State
(4) DARIAN-SMITH
Prerequisite: upper-division standing.
Critical introduction to theories about nationalism and state formation from an anthropological perspective. Topics include nationalism and gender, nationalism and racism, and nationalism and law. These are related to contemporary contradictions of the nation-state posed by transnational processes.

174. Intra-Site Spatial Analysis in Archaeology
(4) ALDENDERFER
Prerequisite: Anthropology 3 or 3SS or 100.
This course is designed to introduce students to quantitative techniques useful for the analysis of spatially-distributed archaeological data within the site. A major focus of the course is the integration of theory, method, and data to solve anthropological problems.

175. Southwestern Archaeology
(4) SCHREIBER
Prerequisite: Anthropology 3 or 3SS.
Understanding the sequence of cultural developments in the southwest United States. Reconstructing prehistoric economy and society through study of material remains, such as the cliff dwellings of Mesa Verde, Chaco Canyon's great pueblos, and the ball-courts, platform mounds, and irrigation systems of desert Hohokam.

176TS. Ancient Egyptian Religion
(4) SMITH
Prerequisite: upper-division standing.
Examination of ancient Egyptian religion from massive temples and pyramids to modest offerings and simple burials. The interaction of sacred and secular is considered through examination of the individual, society, and the state in shaping religious beliefs.

177. China Through Film
(4) YANG
Prerequisite: not open to freshmen.
Students will learn about the world's largest society through readings and Chinese feature films—Communist Revolution, rural collectivization, status of women, economic reforms, anti-traditionalism of Cultural Revolution, etc.

178. Internship in Archaeological Record-Keeping and Collections
(1-4) GLASSOW
Prerequisite: consent of instructor.
A student may enroll for one to four units and may repeat the course up to a maximum of 4 units, but with no more than 4 units in one of the facilities. Interns work three hours per week per unit. No more than 4 units credit toward the major for Anthropology 178 and 183 combined.
Interns serve as assistants in the department's Central Coast Information Center or Repository for Archaeological Collection or both.

179. Seminar on the Anthropology of Symbolism
(4) MINES
Prerequisite: consent of instructor.
A cross-cultural inquiry into the nature and role of symbolism in human society. Discussions on nonverbal communication, myth, ethos, world view, national symbols, political ideology, and the ideology of social structure as symbolic systems.

180A. Faunal Analysis
(4) WALKER
Prerequisite: consent of instructor.
Class is designed to teach students in archaeology and physical anthropology the basic skills necessary to identify and analyze the remains of animals recovered from archaeological excavations. Emphasis is placed on laboratory work with actual archaeological collections and testing hypotheses about prehistoric human behavior.

180B. Faunal Analysis
(4) WALKER
Prerequisites: Anthropology 180A and consent of instructor.
Continuation of Anthropology 180A with the development of a research project.

181. Methods and Techniques of Field Archaeology
(6) GLASSOW
Prerequisite: Anthropology 3 or 3SS.
Introduction to archaeological research designs and field techniques of data collection, including survey, excavation, and site data recording. Course entails two lectures during the week and fieldwork all day Saturday.

182. Quantitative Data Analysis in Archaeology.
(4) ALDENDERFER
Prerequisite: Anthropology 3 or 3SS or 100.
This course is an introduction to the practical analysis of commonly-encountered archaeological data using simple quantitative and statistical procedures such as exploratory data analysis, sampling, regression, and spatial analysis. The course is taught in a computer-assisted (multimedia) format.

182M. Introduction to Lithic Analysis
(4) ALDENDERFER
Prerequisite: Anthropology 3 or 3SS or 100.
This course gives students an introduction to the anthropology and archaeology of making and using stone tools. Practical experience in making tools and using them experimentally is emphasized.

183. Internship in Archaeological Resource Management
(1-4) GLASSOW
Prerequisite: consent of instructor.
No more than 4 units credit combined toward the major for Anthropology 183 and 178.
Interns serve as assistants or trainees in the archaeological programs of a governmental agency, a museum, or a private firm in the local area. In collaboration with the instructor and an extramural archaeologist, the student conceives a set of activities for the internship.

184. Settlement Pattern Analysis in Archaeology
(4) SCHREIBER
Prerequisite: Anthropology 100.
How the arrangement of archaeological sites across the landscape indicates aspects of human culture, including subsistence strategies and socio-political complexity. Methods of obtaining and interpreting settlement data.

185. Environmental Justice
(4) STONICH
Prerequisite: Anthropology 2 or Environmental Studies 1 or 3.
Same course as Environmental Studies 185.
Examines the nexus of race, ethnicity, gender, environmental issues and the interconnections between social and environmental justice in the U.S. and other industrialized countries.

185DS. Capitalism and Racism
(4) DARIAN-SMITH
Prerequisite: upper-division standing.
Not open for credit to students who have completed Interdisciplinary 185DM.
Exploration of historical and contemporary perspectives on constructions of racial difference through philosophy, theory and ethnography. Emphasis on the political uses made of racial categories that accompanied the emergence of modern capitalism, new divisions of labor, and specific economic incentives.

186. Postcolonial Australia
(4) DARIAN-SMITH
Prerequisite: upper-division standing.
Contemporary Australian society in the light of its

colonial history and its ongoing relations with England and its local indigenous populations. Topics considered include aboriginal land rights, multiculturalism, republicanism, and Australia's future role in the Pacific Rim.

187. The Clash of Cultures
(4) FAGAN

Prerequisites: Anthropology 2; and, Anthropology 3 or 3SS.

A historical and anthropological survey of contact between western civilization and nonwestern societies from medieval times up to the early twentieth century. Peoples covered include Khoi, Aztecs, Tahitians, Fuegians, Maori, and Northwest Indians.

188. The Seacoast in Prehistory
(4) STAFF

Prerequisite: Anthropology 3 or 3SS.

An examination of maritime adaptations in world prehistory, emphasizing the integration of marine resources into economies of varying degrees of complexity. Course will cover New and Old World culture areas and the Santa Barbara region.

189. Problems in European Prehistory
(4) JOCHIM

Prerequisite: Anthropology 3 or 3SS.

Seminar in selected problems in the archaeology of Europe.

191. Laboratory Techniques in Archaeology
(6) GLASSOW

Prerequisite: Anthropology 3 or 3SS.

Introduction to the observation and measurement of artifact attributes and procedures for preparation and analysis of archaeological collections. Technology of prehistoric artifact manufacture and use is also considered.

194. Field Training in Archaeology
(1-8) STAFF

Prerequisites: Anthropology 3 or 3SS; and, Anthropology 100 and 133.

May be repeated for credit to a maximum of 16 units, but only 8 units may be applied toward the major.

Introduction to design of research projects and techniques of data collection in archaeology. The number of units taken in one course will depend on the amount of training and experience received.

194P. Practicum in Field and Laboratory Analysis
(1-4) STAFF

Prerequisites: Anthropology 100 and consent of instructor.

May be repeated for credit to a maximum of 8 units, but only 6 units may be applied toward the major.

An applied course emphasizing acquisition of practical skills in archaeological field work and laboratory analysis. Projects will vary depending on the type of archaeological research in progress, but may include artifact processing, cataloging, field excavation, and preparation of research results.

195A-B. Senior Honors Program
(4-4) STAFF

Prerequisites: admission to senior honors program; consent of instructor.

This is a two-quarter, in-progress course with letter grade assigned for both quarters upon completion of Anthropology 195B.

Independent research under the supervision of an anthropology faculty member which will result in senior thesis.

A: Will concentrate on reading and gathering of materials for thesis.

B: Writing of thesis will be completed.

196. Archaeology of Religion
(4) FAGAN

Prerequisite: Anthropology 3.

An analysis and survey of the ways in which archaeologists have approached religious beliefs and other intangibles in ancient societies. Emphasis on multidisciplinary perspectives, ethnographic analogy, and the impact of science on the study of ancient religion.

197. Special Courses
(4) STAFF

Prerequisite: upper-division standing.

May be repeated to a maximum of 12 units provided content is different.

Intensive studies or projects focused on special problems related to anthropology which are not covered by other courses.

198. Independent Readings in Anthropology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in anthropology.

Must have a minimum 3.0 grade-point average for preceding 3 quarters. Students limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated to a maximum of 12 units in anthropology.

Intended for students who know their own reading needs. Normally requires regular meetings with the instructor.

199 Independent Studies in Anthropology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in anthropology.

Must have a minimum 3.0 grade-point average for preceding 3 quarters. Students limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated to a maximum of 12 units in anthropology.

Students must execute a limited research project on their own initiative.

199RA. Undergraduate Research Assistance Training in Anthropology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in anthropology.

Must have a minimum 3.0 grade-point average for preceding 3 quarters. Students limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated to a maximum of 12 units in anthropology.

Student gains research experience through assisting faculty member in research project.

GRADUATE COURSES

200. Summer Field School in Archaeology
(8) STAFF

Prerequisite: consent of instructor.

Introduction to the planning and implementation of full-scale archaeological projects. The opportunity will be given to formulate and carry out research designed and to direct crews in data collection.

201A. Classical Archaeological Theory
(4) JOCHIM

Prerequisite: graduate standing in anthropology.

Not open for credit to students who have completed Anthropology 201.

A survey and critique of archaeological theory from the nineteenth century through the 1970's, with emphasis on shifting paradigms and the implications for research.

201B. Contemporary Archaeological Theory
(4) SCHREIBER

Prerequisite: graduate standing in anthropology.

Not open for credit to students who have completed Anthropology 201.

A survey and critique of archaeological theory from the 1980's to the present, emphasizing the diversity of new approaches and their implications for research.

202. Psychological Anthropology
(4) TOOBY

Field from Freud and Mead to present; how human nature (universal psychological mechanisms) and culture interact to form individual psychologies, identities, genders, social attitudes, worldviews, and traditions; how cognitive development shapes belief systems, reasoning and symbolism; emotions, preferences, thinking, and pathologies in cross-cultural perspective.

203. Proseminar in Archaeological Theory and Practice
(1) STAFF

A proseminar for all incoming archaeology graduate students. Presentations and discussions introduce students to the faculty and the discipline, focusing on research directions and professional preparation and conduct.

206. Current Problems in Archaeology
(4) STAFF

Course may be repeated for credit.

Critical examination of a selected aspect of contemporary archaeological research and theory. Topics will vary from year to year.

207. Problems in Hunter-Gatherer Archaeology
(4) JOCHIM

Prerequisite: consent of instructor.

A problem-oriented seminar focusing on major issues in the archaeology of hunter-gatherers.

210. Basic Issues in Physical Anthropology
(4) WALKER

Prerequisite: consent of instructor.

A review of basic issues in physical anthropology for graduate students in archaeology.

213. Anthropology of Consumption
(4) BRAY

Critical survey of consumption theory. Readings will include Veblen, Elias, Benjamin, Douglas, Bourdieu, de Certeau, Daniel Miller.

214. The Anthropology of Food
(4) BRAY

Critical survey of different anthropological approaches of food production and consumption: biological implications of diet; relations between agricultural forms and political systems; the meanings of feasting; cooking, class and gender; food and national identity; fast food and global capitalism.

215. Cultures of Science
(4) BRAY

Modern science claims to produce value-free, universal knowledge. This course uses feminist and other critical anthropological analyses of scientific activity and discourse to examine how scientific knowledge is produced and the extent to which it reproduces cultural values and social hierarchies.

216. Anthropology of the State and Civil Societies
(4) YANG

An examination of state and counter-state social formations in ancient and modern societies around the world with special attention to state projects of modernity, transnationalism, and civil society in non-western contexts.

218. Problems in Andean Archaeology
(4) SCHREIBER, ALDENDERFER

A problem-oriented approach to major issues in Andean archeology. Conducted on a seminar basis.

219. War and Coalitional Aggression
(4) TOOBY

The evolution, psychology, and anthropology of warfare and coalitional aggression will be examined, with emphasis on small-scale societies and face to face groups, as well as related phenomena such as mob psychology, lynchings, hierarchies, factions, in-group bias, and ethnocentrism.

223. Feminist Theory and Ethnographic Practice
(4) HANCOCK

Recent debates in feminist theory as they have engaged and reconceived ethnographic fieldwork and writing: feminist interventions on poststructuralist and postcolonial theory; feminist critiques of ethnographic writing; current debates on gender and sexuality.

224. Households
(4) ROBERTSON

A comparative and historical study of the household: its theoretical interpretation, empirical manifestations, and the methods appropriate to its analysis.

225. Peasants and Industrialization: "Traditional" Rural Societies
(4) PALERM

The interaction between peasant and industrial socioeconomic formations is examined through three intellectual traditions: late nineteenth century Marxian writers, twentieth century development anthropologists, and proponents of the theory of the articulation of modes of production.

226. Power and Meaning in Religious Experience
(4) HANCOCK

Historical emergence of religion as an anthropological category, cross-cultural meanings of religion, structure and agency in ritual discourse and practice, relations between religion and nationalist movements.

227. Critical Studies in Ethnography
(4) HANCOCK

Recent work in anthropology that problematizes ethnographic research and writing. Exploration of the impact of feminist and critical theory, postcolonial and developmentalism critiques, cultural studies, globalization and transnationalism on ethnographic projects.

228. Culture and Spatial Practice
(4) HANCOCK

Exploration of the sociocultural production of built form and the impact of social space on human action. Readings drawn from cultural anthropology, cultural geography, art history, and social theory. Assessment based on weekly essays, participation, and final project.

229A. History of Cultural Anthropology
(4) STAFF

A history of cultural anthropology as revealed in the writings on major theoretical problems beginning in the 1850's, the disputes, the solutions, and a final appraisal of where we stand today.

229B. Foundations of Modern Social Theory
(4) STAFF

Seminar introduces major post-enlightenment debates on social life and modernity. Selections of Marx, Durkheim, Weber, Freud as well as major responses, revisions and critiques in critical and subaltern theory, cultural studies, structuralism and poststructuralism. Close readings of primary texts emphasized.

229C. Issues in Contemporary Anthropology
(4) STAFF

Survey of major theoretical trends since the 1960's. Topics include: political economy and Marxism; evolution, history, and anthropology; symbolic anthropology; development studies; gender studies; colonialism and nationalism; structuralism/post-structuralism; modernity and post-modernity; ecological anthropology. Topics may vary with each professor.

234. Advanced Theory and Method in Evolutionary Psychology
(4) TOOBY

Prerequisite: consent of instructor.

Interdepartmental research practicum in evolutionary psychology, biology, and anthropology for students and faculty planning or working on evolutionary research projects. Focus on experimental design, cross-cultural methods, organism design theory, new adaptationist hypotheses, and the criteria for testing them.

237. Anthropology of Development
(4) STAFF

May be repeated for credit.

The role of anthropology in the process of development stressing theory and practice.

238. Economic Anthropology
(4) MINES

A critical examination of the main themes and theories of economic anthropology.

239A. Research Design and Writing in Archaeology
(4) STAFF

Prerequisite: graduate standing in archaeology.

How to design a fieldwork project and write a dissertation research proposal; the search for funding agencies; how to deal with funding institutions, professional organizations, publishers and employers; issues of a career in anthropology.

239S. Research Design and Writing in Sociocultural Anthropology
(4) STAFF

Prerequisite: graduate standing in sociocultural anthropology.

How to design a fieldwork project and write a dissertation research proposal; the search for funding agencies; how to deal with funding institutions, professional organizations, publishers and employers; issues of a career in anthropology.

240. Research Methods in Cultural Anthropology
(4) STONICH

Designed to give students a solid grounding in basic research methods in cultural anthropology. Focus on the role of fieldwork, preparation for field research (ethics, health, and gender), systematic data collection, qualitative data base management, and analysis.

242. Archaeology of Imperialism
(4) SCHREIBER

Theoretical and archaeological approaches to prehistoric empires. Overview of major empires. In-depth treatment of Andean empires.

245A. Quantitative Data Analysis in Archaeology
(4) ALDENDERFER

This course is an introduction to the practical analysis of commonly-encountered archaeological data using simple quantitative and statistical procedures, such as exploratory data analysis, sampling, regression, and spatial analysis. The course is taught in a computer-assisted (multimedia) format.

245B. Quantitative Data Analysis in Archaeology
(4) ALDENDERFER

Prerequisite: Anthropology 245A.

A working knowledge of quantitative methods that aid recognition of patterns in archaeological data; an understanding of the sorts of archaeological problems that can be attacked quantitatively; and experience in research designs which yield data that can be effectively analyzed.

246. Anthropology of the Body
(4) STAFF

Prerequisite: graduate standing.

Examination of how culture is embodied and how the body is encultured. Topics include: symbolism and ritual, objectification and discipline, health and medicalization, cultures of perception (sight, smell, taste), sexuality and eroticism, fashion and commercialization, emotion, and food.

249. Agricultural Anthropology
(4) CLEVELAND

Prerequisite: Anthropology 149.

Limited to 10 students.

Analysis of selected current world agriculture problems and alternative solutions, integrating philosophical, sociocultural, and biological approaches, and using detailed case studies.

250AA-ZZ. Method and Theory in Anthropology
(4) STAFF

A discussion of general problems in anthropology. Consult with department office for faculty designation.

251. Methods of Prehistoric Subsistence Analysis
(4) GLASSOW

Assessment of approaches archaeologists use to reconstruct subsistence systems and identify subsistence change among prehistoric hunter-gatherers and farmers.

254. Interpretive Theory and Anthropology
(4) YANG

An examination of a variety of interpretive theories and their relevance to cultural anthropology. Interpretive approaches to religion and ideology, economy, power, gender, and ethnographic representation will be discussed.

255. Anthropology of Mass Media and Popular Culture
(4) YANG

The study of mass media and popular culture, especially in non-Western contexts, from an anthropological perspective—role of media in constructing national, gender, and ethnic identity.

257. Culture/Custom/Power/Law
(4) DARIAN-SMITH

A critical review of the anthropology of law and law-related processes. Classic and contemporary ethnographic analyses are linked to wider theoretical issues involving colonialism, postcolonialism, and globalization. Topics include human rights, citizenship, and new electronic technologies of censorship and surveillance.

258. Social Theory in Transition
(4) DARIAN-SMITH

A broad introduction to some of the major theoretical debates, epistemological shifts and topical interests in the 1960s, 1970s and 1980s that characterize a transition from classic social theory to poststructuralism.

259. Governing Societies
(4) DARIAN-SMITH

Exploration of western theorists concerned with modernity, globalization, and shifting relations between individuals and increasingly powerful bureaucratic states. What is law, and how does it feature in the works of Hobbes, Rousseau, Marx, Weber, Durkheim, Kafka, Foucault, Habermas, and Santos?

260. Cognitive Adaptations and Cultural Transmission
(4) TOOBY

Cultural transmission between individuals and the distribution of representations within groups and across cultures are governed by underlying cognitive adaptations. New research in developmental, cognitive, and evolutionary psychology is related to theories of culture, ideology, conceptual systems, and social institutions.

261. Proseminar: Survey of Biological Anthropology
(4) TOOBY

A reading-intensive survey of the major issues, methods, and findings relevant to biological anthropology, including basic paleoanthropology, primatology, behavioral ecology, evolutionary biology, genetics, and the study of physiological and psychological adaptations.

270D. Problems in South Asian Ethnology
(4) MINES

Seminar in selected problems in ethnology of South Asia.

270F. Problems in Oceanic Ethnology
(4) STAFF

Seminar in selected problems in ethnology of Oceania.

275. Problems in Archaeological Ceramic Analysis
(4) SMITH

Current methods and techniques of ceramic analysis for graduate students. Covers both theoretical issues and data acquisition and analysis, including residue analysis.

276. Culture Contact and Interaction
(4) SMITH

Examination of culture's role in human history, with an emphasis on how the combination of archaeological, historical, ethnohistorical and ethnographic data can yield insights into the

dynamics of interactions between different groups at various times and places.

284. Advanced Settlement Pattern Analysis
(4) SCHREIBER
The acquisition, manipulation, and interpretation of prehistoric settlement pattern data. Includes quantitative approaches.

297. Graduate Studies
(4) STAFF
Prerequisites: graduate standing; consent of instructor and department.
Maximum of 4 units may be applied towards M.A. degree with consent of the graduate advisor.
Graduate tutorial involving regular conferences with instructor and directed research toward seminar paper(s). Attendance at relevant upper-division lectures also required.

501. Teaching Assistant Practicum
(4) STAFF
Prerequisite: appointment as a teaching assistant in anthropology.
No unit credit allowed toward degree.
The course, designed to meet the needs of the graduate student who serves as a teaching assistant, includes analyses of texts and materials, discussion of teaching techniques, conducting discussion sections, formulation of topics and questions for papers and examinations, and grading papers and examinations under the supervision of the instructor assigned to the course.

502. Practicum on Computer and Multimedia Applications in Ethnology
(4) STAFF
Recommended preparation: basic knowledge of microcomputers.
Students learn applications of computers, peripherals, and/or multimedia (audio, video, slides, text, graphics) technologies to ethnology, analysis of ethnological data, and construction of data banks. Reading assignments made. Students demonstrate knowledge gained in a hands on demonstration. Final report written.

594. Field Research Training
(2-12) STAFF
Prerequisite: consent of instructor.
Introduction to the planning and implementation of full-scale research projects. The opportunity will be given to formulate and carry out research designs and to direct crews in data collection.

596. Directed Reading and Research
(2-6) STAFF
Normally no more than half the graduate units necessary for the master's degree may be taken in 596.
Individual tutorial.

597. Individual Study for Master's Comprehensive Examinations
(2-6) STAFF
No unit credit allowed toward degree.
Individual tutorial.

598. Master's Thesis and Pre-Candidacy Preparation
(2-12) STAFF
No unit credit allowed toward degree.
Individual tutorial for graduate students writing the research paper and/or dissertation proposal for advancement to candidacy.

599. Dissertation Research and Preparation
(2-12) STAFF
No unit credit allowed toward degree.
Individual tutorial.

Art History

For art history faculty, program information, and courses, see History of Art and Architecture.

Art Studio

Department of Art Studio,
Division of Humanities and Fine Arts,
Arts Building 534, Room 1316;
Telephone (805) 893-3138
Fax (805) 893-7206
Web site: www.arts.ucsb.edu
Department Chair: Harry Reese

Faculty

Michael A. Arntz, M.A., California State University, Long Beach, Professor (ceramic sculpture)

Gary H. Brown, M.F.A., University of Wisconsin, Professor (painting and drawing)

Jane Callister, M.F.A., University of Nevada, Las Vegas, Assistant Professor (painting)

Kip Fulbeck, M.F.A., UC San Diego, Associate Professor (visual arts)

Colin Gardner, Ph.D., UC Los Angeles, Assistant Professor (critical theory)

Harry Reese, M.A., Brown University and UC Santa Barbara, Professor (printmaking)

Richard Ross, M.F.A., University of Florida, Professor (photography)

Kim Teru Yasuda, M.F.A., University of Southern California, Associate Professor (sculpture)

Emeriti Faculty

William A. Rohrbach, M.A., UC Berkeley, Professor Emeritus (painting)

James D. Smith, Ph.D., University of Oregon, Professor Emeritus (drawing, art education)

Affiliated Faculty

Constance Penley, Ph.D. (Film Studies)

Laurence A. Rickels, Ph.D. (Germanic, Slavic, and Semitic Studies)

Abigail Solomon-Godeau, Ph.D. (History of Art and Architecture)

Making art is an essential human activity. From the beginnings of recorded history, individuals have attempted to document their life experience and vision, interpret their emotions and passions, and satisfy their inherent need to create meaning. The Department of Art Studio recognizes this practice as fundamental to individual growth and the pursuit of knowledge, and has designed its program to complement the general education provided by UCSB. The undergraduate major offers the student a thorough and comprehensive training and understanding of contemporary art. It provides an expansive studio and conceptual foundation in preparation for careers as practicing artists, further studies in graduate and professional schools, and qualified entry into the commercial and professional job market.

Students are introduced to contemporary art theory and practice through the fundamentals survey and studio courses: Visual Literacy 1A, and Introduction to Artmaking 2D, 3D, and 4D. Upon completion of the fundamentals series, students may choose to specialize in any of the following media: painting, drawing, print, photography, book arts, sculpture, ceramics, installation, performance, video, computer/electronic image, critical theory, and interdisciplinary forms. Although the department encourages practical and conceptual experimentation as well as alternative venues for viewing and exhibiting, students are nonetheless expected to document their work using established methods and professional rigor to maintain maximum career options upon graduation. Additionally, students are expected to produce a significant amount of finished artwork during their undergraduate careers. Further information on the major and personal student advising is available in the department through the undergraduate and the graduate advisors.

Students with a bachelor's degree in art studio who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible. Students who plan to teach in the public schools are advised to choose a wide range of courses in art studio. Undergraduate art majors wishing to be teachers must meet the requirements of the UCSB state-approved waiver program or pass the National Teacher Examination (N.T.E.) competency standard in art. Evidence of a passing score on CBEST is also required. (See details in the Graduate School of Education *Announcement.*)

Honors Program

The honors program is designed to provide support for outstanding undergraduates who display both artistic and academic promise. A limited number of applicants are accepted for the full-year program, with preference going to qualified seniors. Eligible students should apply for admission through the department advisor. Requirements for entry into the program include the submission of a strong portfolio for faculty review, a grade-point average of 3.5 or better in the major, a 3.0 average overall, and the completion of 90 units or more. To meet the faculty's expectations, the student must also have earned a fine record in previous coursework in the department. The application is due in the spring quarter. Students selected begin their honors projects in the fall quarter. A group exhibition of completed projects is required. Students participating in the program are also encouraged to apply for the President's Undergraduate Fellowship Awards. Details are available from the department office.

Undergraduate Program

Bachelor of Arts—Art

Preparation for the major. Thirty-six units in lower-division courses including Art Studio 1A, 1B (8 units); Art Studio 2D-3D-4D (12 units); Art Studio 10, 12, 14, 16, 19, 22, or 32 (3 courses, 12 units); Art Studio 18 (4 units).

Upper-division major. Forty units in upper-division courses (including 28 units selected from upper-division art studio courses), 8 units of art history, and Art Studio 125 or Art Studio 130. Up to 8 units of art history or College of Creative Studies courses may be taken on a passed/not passed basis. College of Creative

Studies art courses may be applied only to the 28 undergraduate art studio electives.

Students who plan to attend graduate school are advised to complete a minimum of 16 units within a given area of interest (to include painting, sculpture, printmaking, photography, or ceramics) and 4 additional units of upper-division art history.

Graduate Program

The Department of Art Studio offers a master of fine arts degree. In addition to specific departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

Master of Fine Arts—Art Studio

Admission

In addition to fulfilling the university requirements for admission to graduate status, found in the chapter "Graduate Education at UCSB," each applicant to the graduate program in art studio must have earned a bachelor of arts in art, or its equivalent, with an overall 3.0 grade-point average or better. The applicant must demonstrate outstanding accomplishment as a student artist by submitting a slide portfolio of 20 slides of his or her work. Documentation of work in other forms (such as video, audio, disk, etc.) may also be submitted with prior arrangement with the graduate staff assistant.

Applicants to this program are not required to take the Graduate Record Examination (GRE). Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper-based test or 213 when taking the computer-based test, taken within two years of their application to UCSB.

Applications are reviewed by the faculty; admission is contingent upon approval of a majority of the tenured faculty. Applicants will be ranked, and offered admittance into the program depending on space availability. Admission is limited to fall quarter only. The application deadline is January 15th. Applications and department brochures, describing the program and its requirements, are available from the graduate staff assistant.

Degree Requirements

Students may work in the areas of ceramics, computer imaging, painting and drawing, performance, photography, print and book arts, sculpture and new forms, and theory and criticism. Seventy-two units in graduate-level coursework are required of all admitted M.F.A. students as follows: 36 units of graduate studio courses (Art Studio 244, 260, and 591); 12 units of theory and criticism (Art Studio 245 and 594); 12 units of M.F.A. thesis preparation (Art Studio 593); and 12 units of electives (any approved graduate-level coursework). Students must be registered and work on the degree full time for a duration of two years.

At the end of a student's third quarter of study, a first-year review of both studio and academic work is conducted by the faculty in order to assess the accomplishments of the student during the first year. Upon passing this first-year review, a student is approved by the faculty to advance to the second-year status.

At the beginning of the second year in the program, a student, in consultation with the faculty, nominates a chair and members of the faculty for the M.F.A. thesis committee; thesis committee nominations are reviewed and approved by the faculty. Students are expected to meet with their thesis committee chair and members before the end of the fourth quarter to determine the nature of the M.F.A. thesis project, which includes both an exhibition and thesis document.

The M.F.A. degree is awarded only after successful completion of all requirements. More detailed information on the program and the M.F.A. degree requirements are available from the graduate staff assistant in the department office.

Art Studio Courses

LOWER DIVISION

The department recommends the Art Studio 1A and 2D-3D-4D series be taken at the freshman level. Art Studio courses 10, 12, 14, 16, 19 and 22 may be repeated for credit up to 8 units. The department requires a repeat to be from a different instructor. Exceptions require consent of instructor.

1A. Visual Literacy
(4) STAFF

Open to non-majors.

A lecture for majors and non-majors introducing issues involving the arts. Emphasis will be a broader understanding of reasons for certain types of imagery presented in media, museums, publications, galleries, etc. Lectures will be divided between series of lectures on issues and presentation by a contemporary artist describing his/her work.

1B. Twentieth Century Art History
(4) STAFF

Open to non-majors.

Survey of the most important developments in European and American art history from Neoimpressionism through the developing avant gardes of the early twentieth century, to the post-war impact of the New York School, Pop Art, Minimalism, Conceptualism, and Postmodernism.

2D. Introduction to Artmaking 2D
(4) STAFF

Open to non-majors.

Introduction to contemporary materials, methods, theories, and practices based in two dimensional artmaking. Composition, form, and color theory are discussed and explored through painting, drawing, print and other media, as well as in relation to prominent historical movements and artists in 2D art.

3D. Introduction to Artmaking 3D
(4) STAFF

Open to non-majors.

Introduction to materials, techniques, and movements in the creation and use of objects and manipulation of space. Traditional working methods and mediums are examined through lectures and studio work along with contemporary directions such as installation, public art, environmental and earthworks, etc.

4. The Human Figure—Drawing Course for Non-majors
(3) STAFF

Drawing sessions with models, lectures on subject matter, style, techniques, media. Optional choice additional activities include: small group sessions; drawing; anatomy study workshops; Friday drawing workshop; masters drawing copy study; recommended reading; gallery visits; related lectures, films, TV, etc.

4D. Introduction to Artmaking 4D
(4) STAFF

Open to non-majors.

The art making process in relation to time-based activity and experiences of everyday life. Conceptual introduction to the interdisciplinary integrations of art and life, authorship, authenticity, and narrative through exercises and examples of performance, video, film, book arts, sound, and interactive/chance derived work.

9. Print as Communication
(4) STAFF

May be repeated for credit to a maximum of 8 units.

A survey of the development of techniques used to communicate non-temporal visual information, including fine art and popular imagery. Understanding the relationship between paper, books, printing, and photography, and its impact on culture.

10. Lower-Division Painting
(4) STAFF

Prerequisite: Art Studio 1A.

May be repeated for credit to a maximum of 8 units. Letter-grade required for majors.

Recommended preparation: Art Studio 2D.

Lectures, demonstrations, and projects designed to provide a strong foundation in fundamental 2D image making. Various media to include acrylic, oil, and experimental processes.

12. Lower-Division Sculpture
(4) STAFF

Prerequisite: Art Studio 1A.

Letter-grade required for majors. May be repeated for credit to a maximum of 8 units.

Recommended preparation: Art Studio 2D.

Introduction to the challenges, strategies, and techniques of 3D artmaking within the expanding fields of traditional and contemporary sculpture.

14. Lower-Division Print
(4) STAFF

Open to non-majors. May be repeated for credit to a maximum of 8 units. Letter grade required for majors.

Recommended preparation: Art Studio 1A, 2D, and 3D.

Introduction to making prints. Emphasis on technical fundamentals and conceptual aspects of graphic arts. "Print" incorporates hand produced, mechanically or photographically reproduced, and electronically replicated media.

16. Lower-Division Ceramics
(4) STAFF

Prerequisite: Art Studio 1A.

Open to non-majors. May be repeated for credit to a maximum of 8 units. Letter-grade required for majors.

Recommended preparation: Art Studio 3D.

Introduction to clay as a medium with emphasis on form. Lectures on clay, clay bodies, glazes, and a general survey of ceramics history. Techniques of throwing, handbuilding, glazing, and firing will be covered.

18. Lower-Division Drawing
(4) STAFF

Open to non-majors. Letter-grade required for majors.

Recommended preparation: Art Studio 1A and 2D.

Introductory to two-dimensional representation with various drawing media, including structural and symbolic implications of human form. Emphasis on organization of vision and thought.

19. Lower-Division Photography
(4) STAFF

Prerequisite: Art Studio 1A.

Open to non-majors. May be repeated for credit to a maximum of 8 units. Letter-grade required for majors.

Recommended preparation: Art Studio 4D.

Exploration of the use of photography as a means of personal expression. Thematic and conceptually-based projects to explore how we view, interpret, and manipulate visual information. Lectures cover both major historical and contemporary artists.

20. Language of Photography
(3) STAFF

The course will survey the interdisciplinary application of photography, stressing its usage as a visual language. It will also offer those with a general interest in photography a survey of more specific areas of usage and possible future study.

22. Visual Thinking and Application of Computer Images
(4) STAFF

Prerequisite: Art Studio 1A.

Open to non-majors. Letter-grade required for majors. May be repeated for credit to a maximum of 8 units.

Recommended preparation: Art Studio 4D.

Computer use directed towards visual application. A class stressing the use of computers for visually oriented people and the use of visual thinking for computer oriented people. Experience in either area is welcome but not a prerequisite.

UPPER DIVISION

The specific concepts, techniques, and philosophy of teaching in art studio courses 100 through 120 will vary according to the individual instructor. A syllabus of each instructor's courses will be available in the department office.

100. Intermediate Painting
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, 10, and 18.

Designed for majors. May be repeated for credit to a maximum of 16 units with instructor approval. Letter-grade required for majors.

Various projects designed to assist the understanding and development of intermediate painting practices. Supplemented with slide lectures, library research, and class critique. Additional self-directed projects, sketch books, experimentation, independent research, and self-motivation are encouraged.

101. Advanced Painting
(4) STAFF

Prerequisite: Art Studio 100.

May be repeated for credit to a maximum of 16 units. Letter grade required for majors.

Special studies in painting utilizing particular faculty interests and/or special departmental facilities. Exact nature of course will be specified in the Department of Art Studio syllabus.

102. Intermediate Visual Thinking and Application of Computer Imaging
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, and 22.

May be repeated for credit to a maximum of 16 units with instructor approval. Letter-grade required for majors.

Recommended preparation: Art Studio 14, 18, and 19.

A continuing exploration into the use of digital media in artistic production. Course focus to depend on instructor, but may include animation, web design, public art, and interactive art. Emphasis on creative content, experimentation, and independent thinking.

105. Intermediate 3D Sculpture
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, and 12.

Designed for majors. May be repeated for credit to a maximum of 16 units with instructor approval. Letter-grade required for majors.

Develops student knowledge and proficiency of material and method, cultivating both manual and conceptual skill-levels in three-dimensional practices. Course focus varies by quarter, but may include mold-making, casting, metal fabrication, foundry, and related kiln practices.

106. Advanced 3D Sculpture
(4) STAFF

Prerequisite: Art Studio 105.

May be repeated for credit to a maximum of 16 units.

Special studies in sculpture utilizing particular faculty interest and/or special departmental facilities. Exact nature of courses will be specified in the Department of Art Studio syllabus.

110. Intermediate Print
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, and 14.

Designed for majors. May be repeated for credit to a maximum of 16 units with instructor approval. Letter grade required for majors.

Recommended preparation: Art Studio 18 and 19.

Continued refinement of skills in service of ink and digital production. Emphasis on the intermedia aspects of image and text and the sequential use of pictorial information. Areas of specific focus to include electronic multiples, relief printing, and artists' books.

111. Advanced Printmaking
(4) STAFF

Prerequisite: Art Studio 110.

May be repeated for credit to a maximum of 16 units.

Advanced-level course dealing with a specific faculty interest or special departmental facility in the printmaking area. Exact course content specified in the Department of Art Studio syllabus.

112. Artists' Books
(4) STAFF

Prerequisites: Art Studio 1A, 2D, 14, and 22; upper-division standing.

Designed for majors. May be repeated for credit to a maximum of 16 units.

An investigation of the book as an art form. Based on conventional media, artists' books encompass a variety of methods, techniques, and ideas. Assigned and self-directed projects using traditional and innovative practices, combining reading with pictorial and tactile experience.

115. Upper-Division Ceramics
(4) STAFF

Prerequisites: Art Studio 1A, 3D, and 16.

Designed for majors. May be repeated for credit to a maximum of 16 units. Letter-grade required for majors.

Investigation at an individual level of raku, low fire, salt, and high fire range. Lectures and problems relating to technical aspects of ceramic chemistry. Personal control of form from clay body, fabrication, glazing, to and including firing.

116. Special Studies in Ceramics
(4) ARNTZ

Prerequisite: Art Studio 115.

May be repeated for credit. No cumulative limit.

Advanced-level course dealing with a specific faculty interest or a special departmental facility in the ceramics area. Exact course content specified in the Department of Art Studio syllabus.

117. Intermediate Drawing
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, and 18.

May be repeated for credit to a maximum of 16 units with instructor approval.

Continuing investigation into the challenges of two-dimensional representation. Course focus to depend on instructor, but may include structural and symbolic implications of the human form, historical and contemporary strategies of visual analysis, and exploration into experimental media.

118. Advanced Drawing
(4) STAFF

Prerequisite: Art Studio 117.

May be repeated for credit to a maximum of 16 units. Letter-grade required for majors.

Special studies in drawing utilizing particular faculty interests and/or departmental facilities.

120. Intermediate Photography
(4) STAFF

Prerequisites: Art Studio 1A, 1B, 2D, 3D, 4D, and 19.

Designed for majors. May be repeated for credit to a maximum of 16 units with instructor approval. Letter-grade required for majors.

Recommended preparation: Art Studio 14 and 22.

Continued refinement of traditional photographic technique, and continued development of photography as an artmaking tool. Course to range by instructor, but may include photo narrative, journalism, fashion, artists' books, desktop publishing, web design, time-based work, and intermedia collaborations.

121. Advanced Photography
(4) STAFF

Prerequisites: Art Studio 120.

May be repeated for credit to a maximum of 16 units. Letter-grade required for majors.

Special studies in photography utilizing faculty interests and/or special departmental facilities. Exact nature of course content to be specified in the Department of Art Studio syllabus.

122. Advanced Intermediate Visual Thinking and Application of Computer Images
(4) STAFF

Prerequisites: Art Studio 1A, 4D, and 22.

Designed for majors. May be repeated for credit to a maximum of 16 units. Letter-grade required for majors.

Exploring the role of the computer in the conceptualization, visualization and creation of art. Emphasis on multiple, sequential imaging, animation, and color, as facilities permit.

123. Papermaking
(4) STAFF

Prerequisite: consent of instructor.

Introduction to historical and contemporary methods of handmade papermaking leading to innovative uses of handmade paper as an integral part of art forms.

125. Art Since 1950
(4) STAFF

Prerequisite: Art Studio 1A.

May be repeated for credit to a maximum of 8 units. Letter grade required for majors.

Recommended preparation: upper-division standing.

Developments in American and European art since 1950 with an emphasis on the most recent decades. Focus ranges from the post-war impact of the New York School, Pop Art, Minimalism and Conceptualism to more recent, "postmodern" trends.

130. Visual Arts As Culture
(4) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 16 units.

Exploration of the visual arts in a wide range of socio-cultural and economic contexts. Topics include art's changing institutional role in relation to the shifting parameters of ideology and the state apparatus, history, revolution, nationalism, Orientalism, multiculturalism, postmodernism, high and low culture and new technologies.

132. Video
(4) STAFF

Prerequisites: Art Studio 1A and 4D.

May be repeated for credit to a maximum of 16 units. Letter grade required for majors.

The use of video as an artmaking tool in relation to its increasing prominence and pervasiveness in American culture. Hands on production and post-production are combined with viewing, discussion, and criticism. Integration with other artistic media is encouraged.

134. Performance
(4) STAFF

Prerequisites: Art Studio 1A and 4D.

May be repeated for credit to a maximum of 16

units. Letter grade required for majors.

A workshop introduction to the forms, styles, and strategies relating to the use of the body as both physical and psychological basis for making art. Method, space, narrative, audience, object, games, and chance and rituals are explored.

136. Personal Narrative
(4) STAFF
Prerequisites: upper-division standing and consent of instructor.

Recommended preparation: Art Studio 1A and 4D.

Intensive writing-based workshop designed for formulating and producing artwork based on one's own personal experiences and histories. Experimentation and expansion into other artistic media are encouraged.

192. Internship in Art Studio
(1-4) STAFF
Prerequisites: upper-division standing; consent of department.

Must have a 3.0 overall grade-point average. Units are calculated based on three hours of work per week equaling 1 unit. May be repeated to a maximum of 8 units; 4 units maximum may be applied toward major.

Opportunities in applied learning related to visual art through local business, government, or institutional organizations, working under faculty direction with periodic and final written reports and supporting portfolio.

194. Special Group Studies
(2-4) STAFF
Prerequisites: upper-division standing; and consent of instructor and department.

May be repeated for credit.

A means of making special studies or meeting special curricular problems.

196. Honors Seminar
(4) STAFF
Prerequisite: upper-division standing.

Open to qualified art studio majors with at least a 3.5 grade-point average in the major and at least a 3.0 grade-point average overall; acceptance into the department's honors program. May be repeated for credit to a maximum of 12 units in combination with Art Studio 196HA, HB, and HC.

Seminar designed to focus on criticism of current studio work. A total of 12 units in this course required to complete honors program. Completion of seminar units followed by public exhibition of work accomplished.

199. Independent Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in art studio.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Consent of instructor and chair of department required.

Advanced individual problems.

199RA. Independent Research Assistance in Art Studio
(1-5) STAFF
Prerequisites: upper-division standing; instructor and department approval required prior to registration.

Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

242. Reading and Research in Art Studio
(4) STAFF
Prerequisites: graduate standing and consent of instructor.

Readings and research in topics of a historical and contemporary nature.

244. Graduate Seminar in Critique
(4) STAFF
Prerequisites: graduate standing and consent of instructor.

A seminar focusing on criticism of current studio work.

24S. Graduate Theory Seminar
(4) STAFF
Prerequisites: graduate standing and consent of instructor.

In-depth look at contemporary media and art discourse framed through a wide range of theoretical approaches: formalism, structuralism, phenomenology, psychoanalysis, Marxism, gender and queer studies, poststructuralism, deconstruction, issues of authorship, narratology, and multiculturalism. Specific content varies with instructor.

246. Professionalism
(4) STAFF
Prerequisite: second-year graduate student.

Seminar will address problems of professionalism and survival for graduating M.F.A. students. Portfolios, resumes, commercial galleries, alternate spaces, sales and commission policies, studio spaces, art world politics, taxes, etc., will be discussed by faculty and guest speakers.

260. Graduate Seminar in Visual Arts
(4) STAFF
Prerequisites: graduate standing and consent of instructor.

A means of making special studies and meeting special curricular problems.

501. Teaching Assistant Practicum
(1-4) STAFF
Prerequisite: graduate standing.

Practice of teaching art.

591A. Directed Study in Visual Arts Education
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591C. Directed Study for the M.F.A. in Ceramics
(2-12) ARNTZ
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591DP. Directed Study for the M.F.A. in Drawing/Painting
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591IM. Directed Study in Intermedia (New Forms)
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591PH. Directed Study in Photography
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591PM. Directed Study for the M.F.A. in Printmaking
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591S. Directed Study for the M.F.A. in Sculpture
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

593MS. M.F.A. Thesis Project
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

594. Special Studies in Studio Art
(4) STAFF
Prerequisite: graduate standing.

A means of making special studies and meeting special curricular problems.

59S. Directed Historical Reading and Research
(4) STAFF
Prerequisite: graduate standing.

Independent research involving extensive reading and written essay on a particular period, artist, or body of work with a historical context.

Asian Studies

For Asian Studies faculty, program information, and courses, see East Asian Languages and Cultural Studies.

Asian American Studies

Department of Asian American Studies, Division of Social Sciences, Humanities and Social Sciences 5044; Telephone (805) 893-2371
E-mail: foxen@alishaw.ucsb.edu
Web site: www.asamst.ucsb.edu
Department Chair: vacant

Faculty

Jachinson (Jay) W. Chan, Ph.D., UC Santa Cruz, Assistant Professor (Asian-American literature, theatre, cultural studies)

Sucheng Chan, Ph.D., UC Berkeley, Professor (immigration history, contemporary community issues)

Diane C. Fujino, Ph.D., UC Los Angeles, Assistant Professor (womanist/feminist studies, psychology, interracial relations, Japanese-American experience)

Susan Koshy, Ph.D., UC Los Angeles, Assistant Professor (Asian-American literature, post-Colonial literature, Asian-Indian American experience)

Nolan Wah Sung Zane, Ph.D., University of Washington, Associate Professor (personality, counseling, service delivery)

Xiaojian Zhao, Ph.D., UC Berkeley, Assistant Professor (history, women's history, Asian-American families, Chinese-American experience)

Affiliated Faculty

Jesus M. Casas, Ph.D. (Education)

Catherine Cole, Ph.D. (Dramatic Art)

Jon D. Cruz, Ph.D. (Sociology)

G. Reginald Daniel, Ph.D. (Sociology)

Mark Elliott, Ph.D. (History)

Lawrence K. Fulbeck, M.F.A. (Art Studio)

Shirley Lim, Ph.D. (Women's Studies)

Paul Spickard, Ph.D., UC Berkeley (History)

John Wiemann, Ph.D. (Communication)
Mayfair Yang, Ph.D. (Anthropology)

The Asian American Studies Department offers students an opportunity to study and understand the experiences of Asian Americans, particularly their histories, communities, and cultures. Students will also learn to evaluate the existing literature, gather new information, and analyze a variety of data on Asian Americans.

The history courses treat Asian-American history as part of United States history, but they also highlight selected aspects of Asian history in order to show how homeland developments affected and continue to affect the lives of Asian Americans. Asian-American communities are studied as examples of American ethnic communities whose internal structures and relationships to the wider society change from one historical period to another. Asian-American culture is viewed not as a simple blending of East and West, but as artistic expressions that reflect the development of Asian-American voices and the emergence of Asian-American sensibilities.

Students with a bachelor's degree in Asian American Studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Program

Bachelor of Arts—Asian American Studies

Preparation for the major. Asian American Studies 1, 2, 5, and 3 or 8.

Upper-division major. Forty upper-division units from Asian American Studies and related departments are required, with 12 units from Area A and 12 units from Area B.

Area A. Asian American Studies 100AA-ZZ, 111, 113, 116, 117, 118, 119, 131, 132, 134, 135, 136, 137, 150, 161, 162, 175, 191AA.

Area B. Asian American Studies 121, 122, 125, 127, 128, 129, 142, 143, 144, 145, 147, 170AA-ZZ.

Area C. 16 additional Asian American Studies units except 195H, 197, 199, 199RA. In Area C, up to two courses (8 units) may be substituted by petition when course content is relevant. This includes most courses in Black Studies; Chicano Studies; East Asian Languages and Cultural Studies; Women's Studies; and courses pertaining to Native American studies, usually found in Religious Studies special topic courses. Please consult department for additional information.

Minor—Asian American Studies

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Asian American Studies and those offered by other departments and applied to the minor.

Preparation for the minor. Two courses (8 units) from the following: Asian American Studies 1, 2, 3, 5, 8.

Upper-division minor. Five courses (20 units), distributed as follows, with at least two courses from each area:

Area A. Asian American Studies 100AA-ZZ, 111, 113, 116, 117, 118, 119, 131, 134, 135, 136, 137, 150, 161, 162, 175, 191AA.

Area B. Asian American Studies 121, 122, 125, 127, 128, 129, 142, 143, 144, 145, 147, 170AA-ZZ.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Asian American Studies Courses

LOWER DIVISION

1. Comparative Asian American History, 1850-1965
(4) ZHAO
A comparative analysis of Chinese, Japanese, Korean, Asian Indian, and Filipino immigration into Hawaii and the continental United States; settlement and employment patterns; community organizations; anti-Asian movements; women and families; World War II internment of Japanese Americans; and postwar developments.

2. Contemporary Asian American History
(4) STAFF
Changes in Asian American communities since 1965, as a result of expanded immigration, rise of Asian American panethnicity, and other factors; refugee migration from Vietnam, Cambodia, and Laos; current Asian American social, economic, and political trends; and interethnic relations.

3. Asian American Personality and Identity
(4) ZANE
Cultural values and behavioral norms; ethnic identity development; process of acculturation; family patterns of communication; stressors and social support systems; tokenism; symbolic racism; academic achievement; interpersonal effectiveness; and culturally-responsive mental health treatment and service delivery.

5. Introduction to Asian American Literature
(4) J. CHAN, KOSHY
Selected major themes in literary texts from Asian American communities, including Japanese, Chinese, Korean, Filipino, and Southeast Asian Americans: dislocation/relocation; finding/inventing a usable past; poetics/politics in language; identities/ethnicities.

8. Asian American Gender Relations
(4) FUJINO
Examination of relations between Asian American women and men from sociological, psychological and historical perspectives. Topics include: social construction of gender and race, effects of racism and sexism, media representations, gay and lesbian experiences, education, reproductive labor, anti-Asian and sexualized violence.

UPPER DIVISION

100AA-ZZ. Specific Asian Ethnic Groups
(4) STAFF
May be repeated for credit to a maximum of 12 units provided letter designations are different.
The historical and contemporary experiences of specific Asian ethnic groups.

100AA. Chinese Americans
(4) STAFF
Not open for credit to students who have completed Asian American Studies 51 or 101.

100BB. Japanese Americans
(4) STAFF
Not open for credit to students who have completed Asian American Studies 52 or 102.

100CC. Filipino Americans
(4) STAFF
Not open for credit to students who have completed Asian American Studies 53 or 103.

100DD. Korean Americans
(4) STAFF
Not open for credit to students who have completed Asian American Studies 54 or 104.

100FF. South Asian Americans
(4) STAFF
Not open for credit to students who have completed Asian American Studies 56 or 106.

100HH. Southeast Asian Refugees and Immigrants in the United States
(4) STAFF
Not open for credit to students who have completed Asian American Studies 55, 100EE, 100GG, or 105.

111. Asian American Communities and Contemporary Issues
(4) STAFF
Recommended preparation: a prior course in Asian American studies.
Historical formation of Asian immigrant communities and their social structures and functions; impact of post-1965 Asian immigration on existing communities; issues facing Asian Americans today, including education, employment, discrimination, civil rights, political participation, media stereotypes, and anti-Asian violence.

113. The Asian American Movement
(4) FUJINO
Recommended preparation: a prior course in Asian American studies.
The history of Asian American social movements during the twentieth century. Examination of early immigrant resistance; Japanese American World War II protest; rise of Asian American Movement—student, labor, feminist, anti-war, and yellow power movements—during the 1960s-70s; contemporary social issues.

116. Asian Americans in the Law
(4) ZHAO
Prerequisite: a prior course in Asian American studies or history or law & society.
Laws impacted the lives of Asian Americans and Asian Americans' contributions of the legal system in the United States. Review of landmark court cases with opportunities for students to analyze legal documents.

117. Developing Multicultural Competence
(4) ZANE
Prerequisite: Asian American Studies 1 or 2 or 3 or 8.
Examination of the provision of culturally-sensitive services to ethnic minority communities: African American, American Indian, Asian American, and Hispanic American. Issues studied include human service needs, help-seeking patterns, cultural coping styles, and models of effective service delivery.

118. Asian Americans in Popular Culture
(4) J. CHAN
Recommended preparation: a prior course in Asian American studies.
A historical survey of how Asians and Asian Americans have been represented in American popular culture and an analysis of alternative models of popular culture. Texts include literature, theater, television, film.

119. Asian Americans and Race Relations
(4) FUJINO
Recommended preparation: a prior course in Asian American studies.
Examination of the development of racial ideology and racism, theories of race relations, effects of racism and discrimination against Asian Americans, and contemporary race issues.

121. Asian American Autobiographies and Biographies
(4) KOSHY

Asian American autobiographies and biographies, their socio-political reflections and expressions inscribing the subject in and against culture, relations between intention and form. Readings may include Pardee Lowe, Jade Snow Wong, Monica Sone, Jeanne Houston, Carlos Bulosan, and Maxine Hong Kingston.

122. Asian American Fiction
(4) J. CHAN

Recommended preparation: Asian American Studies 5.

Examination of the ways in which Asian American writers create fiction in order to reflect on pertinent issues concerning Asian Americans, such as race, class, gender, and sexuality. Texts include short stories and novels.

125. Asian American Plays
(4) J. CHAN

Recommended preparation: a prior course in Asian American studies.

An examination of plays by first-, second-, and third-generation Asian Americans that demonstrate divergent yet expanding vitality in Asian American theater; works by Ping Chong, David Henry Hwang, Frank Chin, Genny Lim, Wakako Yamauchi, Philip Kan Gotanda, and Velina Hasu Houston.

127. Asian American Films
(4) STAFF

Recommended preparation: a prior course in Asian American studies.

The films of Wayne Wang, Stephen Ning, Steven Okazaki, Loni Ding, Christine Choy, Renee Tajima, Deborah Bock, Author Dong, Deborah Gee, Felicia Lowe, Robert Nakamura, Spencer Nakasako, Lori Tsang, Supachai Surongsain, Ritu Sarin, and Tenzing Sonam.

128. Writings by Asian American Women
(4) KOSHY

Asian American women's writings covering a variety of genres and cultural communities; emphasis on literary analysis of works in relation to central themes of race, family and gender.

129. Representations of Asia in Asian American Narratives
(4) KOSHY

Course traces the emergence of an American discourse about Asia by examining literary and non-literary texts. Post 1960's Asian American narratives will also be analyzed in terms of their relationship to the earlier discursive frameworks.

131. Asian American Women's History
(4) ZHAO

Prerequisite: a prior course in Asian American studies or history or women's studies.

The lives and changing status of Asian immigrant women, past and present; Japanese and Korean "picture brides;" American-born girls of Asian ancestry; Chinese, Japanese, Korean, and Filipino war brides; adopted Asian girls; and diverse life-styles of Asian American women today.

132. Asian/Asian American Women in the Global Economy
(4) FUJINO

Recommended preparation: a prior course in Asian American studies.

Examination of economic and political systems that affect Asian women's labor in the United States and internationally. Topics include: the intersection of race, class, gender, and sexuality; the garment industry; sex industry; and Asian and Asian American women's resistance.

134. Asian American Men and Contemporary Men's Issues
(4) J. CHAN

Recommended preparation: Asian American Studies 8.

An interdisciplinary study of Asian American male identities, masculinities, and bodies; emphasis on literary, sociocultural, cinematic, and popular culture representations; Asian American masculinist discourses as complements to Asian American feminist discourses. Texts include literatures, films, photos, comic books, and essays.

135. Asian Pacific American Queer Issues
(4) STAFF

Recommended preparation: a prior course in Asian American studies.

An interdisciplinary survey of the histories, experiences, and identities of Asian Pacific American gays, lesbians, and bisexuals; coming out issues, family and community pressures, and socio-political representation in Asian Pacific American communities and in the mainstream gay movement.

136. Asian American Families
(4) ZHAO

Prerequisite: a prior course in Asian American studies or history or women's studies.

The importance of the family in the East and Southeast Asian cultural heritage; family formation in the United States; contemporary Asian American family dynamics; interracial families; changing gender roles and relationships; the family and the life cycle.

137. Multiethnic Asian Americans
(4) STAFF

Not open for credit to students who have completed Asian American Studies 7 or 107.

Recommended preparation: a prior course in Asian American studies.

The history, identities, and social relations of multiethnic Asian Americans. Uses fiction, autobiography, sociological and psychological studies of people of mixed racial or ethnic parentage. Considers cognate issues such as interracial marriage.

142. Introductory Asian American Performance Workshop
(4) STAFF

Recommended preparation: a prior course in Asian American studies.

An introductory performance workshop focusing on Asian American themes. Students write original pieces, learn the basic techniques of stage performance, and participate in presenting a public performance at the end of the quarter.

143. Asian American Videomaking Workshop
(4) STAFF

Recommended preparation: a prior course in Asian American studies.

A workshop to introduce students to the basic techniques of videomaking. Discussions of the challenges facing Asian American artists who wish to focus on themes from their own social history. Exercises in the production of short video.

144. Asian American Visual Media Workshop
(4) STAFF

Recommended preparation: a prior course in Asian American studies.

A laboratory workshop in which students can use a variety of visual media, such as photography, film, painting, and drawing to express the Asian American experience.

145. Intermediate Asian American Performance Workshop
(4) STAFF

Prerequisite: Asian American Studies 142.

An intermediate performance workshop focusing on Asian American themes. Course provides in-depth exercises in writing, rehearsing, and producing a public performance.

147. Asian American Play Writing
(4) STAFF

Recommended prepration: a prior course in Asian American studies.

Examination of various dramatic techniques, dialogue construction and character development used in writing for the theater. Students will create an original short play or performance piece. Some pieces may be developed for staged presentation.

150. Pacific Islander Americans
(4) STAFF

Recommended prepration: a prior course in Asian American studies.

Examination of the histories, migration patterns, ethnic identities, family dynamics, community organizations, cultures, religions, health and mental health, social service needs, political concerns, and intergroup relations of people from Hawaii, Samoa, Tonga, Guam, Fiji, and other Pacific Islands.

161. Asian and Pacific Americans and Religion
(4) STAFF

Recommended prepration: a prior course in Asian American studies.

Examination of the religious experiences of Asian and Pacific Islander Americans. Buddhism, Islam, Hinduism, Confucianism, Shinto, and Christianity in their Asian/Pacific and Asian/Pacific American forms. Emphasis on social and historical context as well as theology, experience, and expression.

162. Psychological Issues of Asian Americans
(4) ZANE

Prerequisite: Asian American Studies 3.

Examination of the current theory and research on the specific psychological issues that affect Asian Americans. Special emphasis on how immigration experiences, acculturation, cultural values, ethnic identity, and racism influence various aspects of psychological functioning.

170AA-ZZ. Special Topics in Asian American Studies
(4) STAFF

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Recommended prepataration: a prior course in Asian American studies.

An upper-division seminar focusing on various topics not offered in other Asian American studies courses.

175. Theory and Method in Asian American Studies
(4) STAFF

Prerequisites: junior or senior standing; open to Asian American studies majors only.

Exploration of the main theoretical orientations that have shaped Asian American studies: race and ethnicity, diasporas, international labor migration, etc. Introduction to several methodologies, including historiography, quantitative social science, literary criticism, and ethnography.

191AA. Research Seminar in Asian American History
(4) ZHAO

Prerequisites: Asian American Studies 1 or 2, or one lower-division course in history; upper-division standing.

A research seminar exploring historical approaches to studying Asian American experiences. Students have the opportunity to collect, analyze, and evaluate historical documents and manuscripts. Students carry out a research project and produce a research paper.

195H. Senior Honors Project
(4) STAFF

Prerequisites: Open only to Asian American studies majors who have completed at least six upper-division courses in Asian American studies.

Must have a 3.0 overall grade-point average and 3.5 grade-point average in courses in the major.

Offers an opportunity to students who meet the prerequisites to do independent research and to write an honors thesis or produce an honors film/video or performance.

197. Field Studies
(1-4) STAFF

Prerequisites: upper-division standing; completion of at least two upper-division courses in Asian American studies.

Must have at least a 3.0 grade-point average for the preceding three quarters. May be repeated for credit to a maximum of 8 units.

Students will conduct independent field work in Asian American communities. Specific projects include working with community agencies and organizations to evaluate programs, implement new or modified services, and develop community resources.

199. Independent Studies
(1-4) STAFF
Prerequisites: upper-division standing; one lower-division course and two upper-division courses in Asian American studies.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Maximum of 4 units per quarter or a total of 12 units in Asian American studies. Students are limited to 5 units per quarter, and 30 units total in all 98/99/198/199/199RA courses combined.

Independent study of topics not covered in the regular curriculum under the guidance of an approved faculty member.

199RA. Independent Research Assistance in Asian American Studies
(1-4) STAFF
Prerequisites: upper-division standing; two upper-division courses in Asian American studies; consent of instructor and department.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses.

Students will assist faculty in the latter's research under the personal supervision of the faculty.

GRADUATE COURSES

500. Laboratory for Teaching Assistants
(4) STAFF
Prerequisite: departmental approval; appointment as a teaching assistant in a lower-division Asian American studies course.

No unit credit allowed toward advanced degree.

Supervised teaching of Asian American studies lower-division courses.

596. Directed Reading and Research
(1-4) STAFF
Prerequisites: graduate standing and consent of instructor.

Reading and research in special topics in Asian American studies.

Biochemistry and Molecular Biology

Interdepartmental Graduate Program in Biochemistry and Molecular Biology, Division of Mathematical, Life, and Physical Sciences,
Biological Sciences, Bldg. 478, Room 1001;
Telephone (805) 893-2290
E-mail: bmbprog@lifesci.ucsb.edu
Web site: lifesci.ucsb.edu/BMB/
Program Chair: James B. Cooper

Faculty

Roymarie Ballester, Ph.D., Albert Einstein College of Medicine, Assistant Professor (eukaryotic cell microbiology)

Rolf E. Christoffersen, Ph.D., UC Los Angeles, Associate Professor (plant molecular biology)

Louise Clarke, Ph.D., UC Santa Barbara, Professor (biochemistry, genetics)

Dennis O. Clegg, Ph.D., UC Berkeley, Professor (neurobiology)

James B. Cooper, Ph.D., Washington University, Professor (plant molecular biology)

Timothy Deming, Ph.D., UC Berkeley, Associate Professor (synthetic chemistry, polymerization catalysis, biopolymer synthesis, biocompatible materials)

Deborah K. Fygenson, Ph.D., Princeton University, Assistant Professor (biophysics-experimental)

J. Thomas C. Gerig, Ph.D., Brown University, Professor (bio-organic chemistry)

Jacob Israelachvili, Ph.D., University of Cambridge, Professor (surface and interfacial phenomena, adhesion, colloidal systems, surface forces, bio-adhesion, friction)

John Lew, Ph.D., University of Calgary, Alberta, Assistant Professor (biochemistry)

David Low, Ph.D., UC Irvine, Professor (biochemistry, genetics)

Michael J. Mahan, Ph.D., University of Utah, Associate Professor (microbiology)

Daniel Morse, Ph.D., Albert Einstein College of Medicine, Professor (molecular genetics, biochemistry, marine biology, developmental biology)

Stanley M. Parsons, Ph.D., California Institute of Technology, Professor (biological chemistry)

John J. Perona, Ph.D., Yale University, Assistant Professor (physical biochemistry)

Philip A. Pincus, Ph.D., UC Berkeley, Professor (polymers, colloids, surfactants, membranes, biomaterials)

Kevin W. Plaxco, Ph.D., California Institute of Technology, Assistant Professor (molecular biology, biochemistry)

Norbert O. Reich, Ph.D., UC San Francisco, Professor (biological chemistry)

Joel H. Rothman, Ph.D., University of Oregon, Eugene, Associate Professor (developmental biology and genetics)

Cyrus R. Safinya, Ph.D., Massachusetts Institute of Technology, Professor (biomolecular materials)

Charles E. Samuel, Ph.D., UC Berkeley, Professor (virology, molecular biology, biochemistry)

Duane Sears, Ph.D., Columbia University, Professor (biochemistry)

Galen Stucky, Ph.D., Iowa State University, Professor (biomaterials, surfactants, composites, materials synthesis, porous materials)

Carol A. Vandenberg, Ph.D., UC San Diego, Associate Professor (neurobiology)

J. Herbert Waite, Ph.D., Duke University, Professor (marine biomolecular materials)

Leslie Wilson, Ph.D., Tufts University, Professor (biochemical pharmacology)

Emeriti Faculty

Thomas C. Bruice, Ph.D., University of Southern California, Research Professor

John A. Carbon, Ph.D., Northwestern University, Research Professor (biochemistry)

Ellis Englesberg, Ph.D., UC Berkeley, Professor Emeritus

Nancy L. Lee, Ph.D., University of Pittsburgh, Professor Emeritus (microbiology)

Robert L. Sinsheimer, Ph.D., Massachusetts Institute of Technology, Professor Emeritus (biochemistry)

George Taborsky, Ph.D., Yale University, Professor Emeritus

Edward L. Triplett, Ph.D., Stanford University, Professor Emeritus

The interdepartmental graduate program in biochemistry and molecular biology offers studies leading to the Ph.D. degree. The program is administered jointly by faculty in the Department of Molecular, Cellular, and Developmental Biology; Chemistry and Biochemistry; Materials; Physics; and Chemical Engineering. The program provides unique opportunities for intensive research training at the interface between the physical and life sciences in highly interactive and collaborative laboratories. The diverse group of program faculty provide students with an exceptionally broad range of challenging opportunities for multidisciplinary research in biomolecular structure, function, and engineering. Research areas currently under active investigation on campus include kinetics and regulation of enzyme catalysis, chromosome structure and cell cycle regulation, the cytoskeleton and extracellular matrix, mechanisms regulating signal transduction and cellular differentiation, protein structure and structure-function relationships, protein-nucleic acid interactions, biomolecular materials, molecular neurobiology, plant molecular biology, bacterial pathogenesis, and molecular virology and immunology. A complete listing of research interests of the participating faculty can be obtained by writing to the above address, or from the BMB web site at lifesci.ucsb.edu/BMB/

The program accommodates students with a diversity of backgrounds and career goals who are interested in multidisciplinary research training. Students with undergraduate degrees in one of the life or physical sciences are accepted into the program. In addition to specific program requirements, candidates for graduate degrees must meet all university degree requirements found in the chapter "Graduate Education at UCSB." Highly individualized programs of instruction can be undertaken by a student enrolled in the program after consultation with and approval by the graduate committee and a research mentor. Approximately 29 faculty members from the affiliated departments are available to direct approved research projects under the auspices of the BMB program.

Graduate Program

Doctor of Philosophy—Biochemistry and Molecular Biology

Admission

In addition to fulfilling the departmental admission requirements outlined below, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." The applicants will normally hold a bachelor's degree in chemistry, biochemistry, or another

biological science. Undergraduate preparation should include one year each of introductory chemistry, biology and physics, one year of calculus (differential equations recommended), one year of organic chemistry, one year of biochemistry, one course in physical chemistry (one year recommended), one course in molecular genetics or molecular biology and additional specialized electives. The target deadline for completed applications is December 15th.

Applicants with strong undergraduate records who lack some of the preparation indicated above may be admitted with the condition that they complete necessary coursework early in their graduate careers.

Transcripts and Graduate Record Exam (GRE) general test scores are required of all applicants. One of the following three GRE subject tests—biology; or chemistry; or biochemistry, cell, and molecular biology—is recommended. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 630 when taking the paper-based test or 267 when taking the computer-based test, taken within two years of their application to UCSB.

Degree Requirements

Lecture Courses: Students in the BMB program must complete core graduate courses in Proteins, Nucleic Acids, and Physical Biochemistry, with the grade of B or better. In addition, BMB students must satisfactorily complete two graduate-level elective courses in the 200 series before advancement to candidacy.

Seminar Courses: Each quarter of the student's graduate study, enrollment is also required in BMB 260 (Research Seminar), and BMB 262 (Research Progress in Biochemistry and Molecular Biology). In addition, enrollment in two graduate literature seminars per year in the 260 or 595 series is required until formal advancement to candidacy for the Ph.D.

Examinations: In order to qualify for advancement to doctoral candidacy, students must form a doctoral committee and successfully complete, in addition to the required courses, two qualifying examinations, each consisting of a written research proposition followed by an oral defense of the proposition. The examinations are normally taken at the beginning of the second and third year of graduate study. The topic of the first examination is chosen from an area different from the student' anticipated research; the second examination is based on the students' dissertation research. The final requirement for the Ph.D. degree is a written dissertation and its oral defense, which usually is in the form of a scheduled interdepartmental program seminar.

Research: Students in the BMB program normally complete three one-quarter laboratory rotations during the first year of study, and are expected to begin research for the dissertation by the end of the first calendar year in the program. Research directors may be selected from any of the faculty affiliated with the interdepartmental program.

Biochemistry and Molecular Biology Courses

UPPER DIVISION

199. Independent Studies in Biochemistry.
(1-S) STAFF

Prerequisites: upper-division standing; consent of instructor and department.

Students must have a 3.0 grade-point average for the preceding three quarters. Up to B units may apply toward upper-division major requirements and may be taken in combination with courses numbered 16B, 169, 1B4, 190-199, and BMB courses numbered 195-199, unless otherwise specified by the major. Students are limited to five units per quarter and 30 units total in all 98/99/19B/199/199RA courses combined.

Hours and credit by arrangement with any member of the staff. Laboratory.

GRADUATE COURSES

218A. Nucleic Acids and Proteins
(S) LEW, PERONA, PLAXCO

Prerequisite: graduate standing in biochemistry-molecular biology, or chemistry.

Same course as MCDB 218A.

Properties, structure, and structure-function analysis of nucleic acid research (synthetic and recombinant DNA, in vitro mutagenesis); protein dynamics (folding, transport, covalent, and non-covalent structural adaptations to function). (F)

218B. Molecular and Cellular Biology
(5) CLEGG, FOLTZ, SAMUEL, WILSON

Prerequisite: graduate standing.

Same course as MCDB 218B.

The cytoskeleton; chromatin and chromosome organization, structure, and function; mechanisms of gene expression in prokaryotes and eukaryotes and their viruses; membrane structure, organization, and protein trafficking; cell-cell and cell-matrix interactions. (W)

218C. Gene Regulation and Development
(5) STAFF

Prerequisite: MCDB 21BB or BMB 218B.

Same course as MCDB 21BC.

Specialized features of plant cells. Regulation of gene expression during development. Models include prokaryotes (bacteria) and eukaryotes (plants, yeast, ciliates, C. elegans, Drosophila, sea urchins, mouse), with emphasis on systems that undergo cellular differentiation and cellular rearrangement. (S)

218X. Selected Topics in Gene Regulation and Development
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as MCDB 21BX.

Selected topics in gene regulation and development as appropriate to fulfill the course requirement of graduate students in biochemistry and molecular biology.

218Y. Selected Topics in Molecular and Cellular Biology
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as MCDB 21BY.

Selected topics in molecular and cellular biology as appropriate to fulfill the course requirement of graduate students in biochemistry and molecular biology, and molecular, cellular, and developmental biology.

218Z. Selected Topics in Biochemistry of Nucleic Acids and Proteins
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as MCDB 218Z.

Selected topics in the biochemistry of nucleic acids and proteins as appropriate to fulfill the course requirement of graduate students in biochemistry and molecular biology.

221. Preparation and Evaluation of Research Proposals
(1) STAFF

Prerequisites: BMB 218A-B or MCDB 21BA-B.

Instruction in preparation, writing, and evaluation of research grant proposals. Students are required to submit a full research proposal (in Federal funding agency format) at the end of the course.

242. Cellular Growth Control and Oncogenesis
(4) BALLESTER

Prerequisites: MCDB 10BA-B-C and 101A-B.

This course focuses on the molecular mechanism of growth control in eukaryotes. Topics include: growth factors and their receptors, intracellular signaling, cell cycle control, oncogenes, tumor suppressor genes, and cancer. Model system studied will include: mammalian cells, Xenopus oocytes, C. elegans, Drosophila, and yeast.

245. Computational Biochemistry
(3) PERONA, REICH

Prerequisites: Chemistry 142A-B-C or MCDB 108A-B-C; and two prior quarters of physical chemistry.

Same course as Chemistry 245.

Introduction to molecular modeling and molecular dynamics. Discussion of practical considerations of energy minimization, solvent modeling, structure-based drug design. Practical computer graphics experience.

246. Membrane Biochemistry
(3) PARSONS

Prerequisites: Chemistry 142A-B-C or MCDB 10BA-B-C.

Same course as Chemistry 246.

Introduction to the structures and roles of lipids and there behavior, liposomes, membrane proteins and kinetics, protein sorting, and signal transduction.

254. Drug Design
(3) REICH

Prerequisites: Chemistry 142A-B-C or MCDB 10BA-B-C.

Same course as Chemistry 262.

Rational drug design. Active site directed and mechanism based inhibitors. The use of computers and energy calculations in the design of drugs. Structure based drug design.

256A. Physical Biochemistry
(S) GERIG, PERONA, PLAXCO

Prerequisites: one year of undergraduate courses in biochemistry, organic chemistry, and physical chemistry.

Same course as Chemistry 256A.

Isolation and structural analysis of biomolecules; hydrodynamics, spectroscopy, diffraction, scattering.

256B. Enzyme Kinetics and Mechanisms
(5) PARSONS, REICH

Prerequisites: one year of undergraduate courses in each of the following: biochemistry, organic chemistry, physical chemistry.

Same course as Chemistry 256B.

Enzyme kinetic and chemical mechanisms. Theory, experimental design, and data analysis. Enzyme models and nonclassical enzymes.

259. Selected Topics in Biological Chemistry
(1-4) STAFF

Prerequisite: consent of instructor.

Same course as Chemistry 259.

Selected topics from bio-organic, biophysical, or biological chemistry. The content of this course will vary. Course may be repeated with a different topic (18 units maximum).

260. Research Seminar in Biochemistry-Molecular Biology
(1) J. COOPER

Prerequisite: graduate standing.

Same course as MCDB 260.

Seminars on research in progress presented by faculty of the Department of Chemistry and

Department of Molecular, Cellular and Developmental Biology.

262. Research Progress in Biochemistry and Molecular Biology
(1) STAFF

Same course as MCDB 262.

Research presentations by postdoctoral fellows and advanced Ph.D. students of research progress in the department.

263. Progress in Biochemistry and Molecular Biology
(1) STAFF

Same course as MCDB 263.

Research seminars presented by invited speakers on current research topics.

264. Literature in Signal Transduction
(1) BALLESTER, LEW

Prerequisite: graduate standing.

Critical reading and presentation of the literature on signal transduction mechanisms that control cell growth and differentiation.

281. Protein Crystallography
(3) PERONA

Prerequisite: consent of instructor.

Same course as Chemistry 281.

Introduction to diffraction techniques. Protein crystal growth and morphology. Data collection and reduction strategies. Approaches for solving the phase problem. Crystallographic refinement, including molecular dynamics. Interpretation of crystal structures.

290AA-ZZ. Group Studies
(2) STAFF

Prerequisite: consent of instructor.

Presentation and discussion of current research, to be selected from the following list.

A. Molecular Marine Biology: Morse, D.E.
B. Biomineralization: Stucky, G.D.
BP. Bacterial Pathogensis: Mahan, M.J.
C. Studies in Regulation of Cell Proliferation: Ballester
CC. Centromeres and Chromosomes–Models and Analysis: Carbon
CE. C. elegans Development: Rothman
CS. Advanced Topics in Chromosome Segregation: Clarke
DN. Developmental Neurobiology: Clegg, D.O.
HW. Marine Structural Proteins: Waite, J.H.
LK. Biological Macromolecules: Kohlstaedt, L.
PM. Molecular Plant-Microbe Interactions: J. Cooper
PR. Protein-Nucleic Acid Interactions: Perona, J.J.
S. Molecular Virology and Interferon Action: Samuel, C.E.

595. Group Studies
(2) STAFF

Prerequisite: consent of instructor.

A critical review of research in selected areas of biochemistry-molecular biology.

596BI. Directed Reading and Research
(2-12) STAFF

Prerequisite: consent of instructor.

Same course as MCDB 596. May be repeated for credit up to half of the graduate units required for the M.A. degree.

Hours and credit by arrangement with faculty.

596CH. Directed Reading and Research.
(2-12) STAFF

Same course as Chemistry 596. No more than half the units necessary for the Master's degree may be taken in Biochemistry-Molecular Biology 596.

Individual tutorial. Instructor usually is the student's major professor. A written proposal for each tutorial must be approved by the department chair. Each faculty member has a unique number designation.

Biological Sciences

For biological sciences majors see Ecology, Evolution, and Marine Biology (EEMB), and Molecular, Cellular, and Developmental Biology (MCDB).

Interdepartmental Graduate Program in Biochemistry and Molecular Biology

For details see Biochemistry and Molecular Biology.

Black Studies

Department of Black Studies,
Division of Social Sciences,
South Hall 3631;
Telephone (805) 893-3800
Undergraduate Advisor (805) 893-7624
E-mail: dennis@sscf.ucsb.edu
Web site: www.blacst.ucsb.edu
Department Chair: Gérard G. Pigeon

Faculty

Jude G. Akudinobi, Ph.D., University of Southern California, Lecturer (cinema-television critical studies)

Faith D. Berry, Ph.D., Florida State University, Professor (Afro-American literature and gender studies)

Douglas H. Daniels, Ph.D., UC Berkeley, Professor (American and Afro-American history)

Martha Swearingen Davis, Ph.D., Stanford University, Assistant Professor (ethnolinguistics, Creole and vernacular languages, Latin American studies)

Jane M. Duran, Ph.D., Rutgers University, Lecturer (philosophy and social theory)

Kofi B. Hadjor, M.A., Carleton University, McGill University, and Stanford University, Lecturer (African studies)

Shirley Kennedy, Ph.D., Claremont Graduate Center, Lecturer (public policy)

Otis F. Madison, C. Phil., UC Santa Barbara, Lecturer (Afro-American politics)

Christopher McAuley, Ph.D., University of Michigan, Assistant Professor (political economy)

Claudine Michel, Ph.D., UC Santa Barbara, Associate Professor (multicultural/comparative education, cross-cultural psychology)

Oyeronke Oyewumi, Ph.D., UC Berkeley, Assistant Professor (gender, culture, race and ethnic relations)

Gérard G. Pigeon, Ph.D., UC Santa Barbara, Associate Professor (French literature and linguistics)

Cedric J. Robinson, Ph.D., Stanford University, Professor (political theory, popular culture and ideology)

Earl L. Stewart, D.M.A., University of Texas, Associate Professor (Afro-American music)

Emeriti Faculty

James D. Smith, Ph.D. (Art Studio)

Affiliated Faculty

Jacqueline Bobo, Ph.D. (Women's Studies)

Elliott Butler-Evans, Ph.D. (English)

Sethard Fisher, Ph.D. (Sociology)

Susan Koshy, Ph.D. (Asian-American Studies)

A. E. Keir Nash, Ph.D. (Political Science)

Garth St. Omer, Ph.D. (English)

James D. Smith, Ph.D. (Art Studio)

The Department of Black Studies seeks to increase the general awareness and understanding of the Black experience through an examination of its historical and contemporary manifestations in various societies. It utilizes a cross-cultural approach, incorporating the active participation of faculty, students, and the wider community. The department offers a major leading to the B.A. degree. The faculty is available to students who are pursuing graduate degrees in other departments on topics in the area of Black Studies.

The major in Black Studies is designed to provide (1) a broad, cross-cultural orientation focusing on the heritage and contemporary social situation of Black people; and (2) instruction for students who intend to do graduate work in the area of ethnic-American studies or allied areas in the social sciences, humanities, or arts. The major provides suitable undergraduate preparation for careers in teaching, social services, or governmental agencies.

Students with a bachelor's degree in Black Studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Students majoring in Black Studies are required to consult with the department undergraduate advisor. Each quarter, prior to registration, the department publishes a description of the content of courses to be offered. A second publication, describing the undergraduate program and courses, is updated periodically. Both publications are available in the department office.

Undergraduate Program

Bachelor of Arts—Black Studies

Preparation for the major. Required: two courses from Black Studies 1, 3, or 7; Black Studies 2 or 160; Black Studies 6; one course from Black Studies 14, 38A, 38B, or 50; one course from Black Studies 90 or 193AA-ZZ; and two courses from two of the following departments: Anthropology 2, 5; Asian American Studies 2, 3; Chicano Studies 1A-B-C; Geography 3A, 3B, 5; History 4A-B-C, or 11A, 11B, 17A-B-C; Philosophy 1; Political Science 6, 7, 12; Sociology 1, 2, 3; Women's Studies 20, 30. Upper-division Black Studies courses used in preparation for the major cannot apply to the upper-division major.

Black Studies majors are encouraged to take at least three quarters of a foreign language of their choice.

Upper-division major. Thirty-six units of upper-division Black Studies courses are required. Four units must be taken from Black Studies 193AA-ZZ; 8 units may be taken in upper-division work in closely related departments or fields, chosen in consultation with the department advisor. No more than 8 units of Black Studies 199 will apply to the major. If a student opts to take Black Studies 193 instead of 90 in the preparation for the major, the student will then need 8 units of 193.

Minor—Black Studies

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in Black Studies and those offered by other departments and applied to the minor.

Preparation for the minor. One course from Black Studies 1, 3, or 7. Black Studies 2 or 160* *(*note: upper-division Black Studies courses used in preparation for the minor cannot apply to the upper-division minor),* Black Studies 6.

Upper-division minor. Twenty units, distributed as follows: two courses from Black Studies 100, 121, 170; one upper-division seminar (193AA-ZZ), two elective Black Studies lecture courses.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Black Studies Courses

LOWER DIVISION

1. Introduction to Afro-American Studies
(4) DANIELS, MCAULEY

Not open for credit to students who have completed Black Studies 1A.

Historical and current social conditions of Black people in the United States. Topics include slavery, emancipation, reconstruction, and urban Black migration, with particular consideration given to the Black church and the Black family as bearers and creators of Afro-American culture.

2. Group Exploration of Racism
(4) MICHEL

Discussions designed to explore, identify, and understand the social and emotional pathology of racist orientations as they appear in everyday life. Focus on personal experiences, with extensive student involvement and participation expected. Not restricted to majors. Limited enrollment.

3. Introduction to African Studies
(4) OYEWUMI, HADJOR

Not open for credit to students who have completed Black Studies 1C.

A survey of the subject matter, themes, and methods of African studies. While briefly surveying the prehistory and early states of Africa, the course will focus on the culture and society of the colonial and independence eras.

5. Blacks and Western Civilization
(4) ROBINSON, MCAULEY

An interdisciplinary analysis of the effects of Africa on Western Civilization, specifically the politics, economics, and cultures of Europe, the Caribbean, and North America.

6. The Civil Rights Movement
(4) MADISON

History of the modern civil rights movement, its organization and ideology from its origins in the post-reconstruction era, to its triumphs with the end of legal racial segregation, and its recognition in the civil rights legislation in the 1960s.

7. Introduction to Caribbean Studies
(4) PIGEON, MCAULEY

Not open for credit to students who have completed Black Studies 1B.

A survey of the culture and society of the Caribbean. After surveying Amerindian communities and examining the impact of the Atlantic slave trade, focus will be on slavery, emancipation, African and Creole cultures, and the issues accompanying an independent nationhood status.

10. Introduction to Afro-Latin American Studies
(4) DAVIS

Examines, from an interdisciplinary perspective, black communities in Latin America. Topics include African slavery in the Spanish/Portuguese colonies, maroon societies, and surviving black settlements from the post-slavery period to the present.

14. The History of Jazz
(4) DANIELS, STEWART

Not open for credit to students who have completed Black Studies 114.

A survey of the historical origins and development of jazz, beginning with the West African heritage and the Afro-American folk tradition, and examining the social and cultural context of this twentieth-century music.

15. The Psychology of Blacks
(4) MICHEL

An examination of the Black ethos. The connections between Africa, the Caribbean, and Afro-America are examined with respect to the psychological traits common to Black people.

20. Introduction to Afro-American Politics
(4) KENNEDY, HADJOR

Provides a politico-historical overview of Afro-American involvement in the politics of the United States from slavery to the present.

36. Afro-American Oral Traditions
(4) PIGEON, DAVIS

Not open for credit to students who have completed Black Studies 128.

Oral traditions of Afro-American and Caribbean cultures as expressed in Black idioms and folklore with some attention to the African background.

38A. Introduction to Afro-American Literature (Part I)
(4) BERRY, DURAN

Not open for credit to students who have completed Black Studies 38.

Afro-American literature from colonial times through the Harlem renaissance.

38B. Introduction to Afro-American Literature (Part II)
(4) BERRY, DURAN

Not open for credit to students who have completed Black Studies 38.

Afro-American literature from the 1930s to the present.

50. Blacks in the Media
(4) PIGEON, MADISON

The development of Black stereotypes. Studying literature, comic books, comic strips, cartoons, music, theater, cinema, broadcasting, and television, students will analyze the mythical imageries which have created stereotypes.

60A. Religion in Black America (Part I)
(4) STAFF

Same course as Religious Studies 61A.

A historical examination, beginning with West African heritage, of Afro-American religious leaders and organizations in the United States during slavery and until the end of the nineteenth century.

60B. Religion in Black America (Part II)
(4) STAFF

Same course as Religious Studies 61B.

A historical survey of major Black religious figures, organizations, movements, philosophies, and issues. Emphasis on contemporary religious phenomena in the Black religious community of the United States during the twentieth century.

90. Sophomore Seminar
(4) STAFF

Prerequisites: sophomore standing.

A reading seminar which focuses upon specific topics such as Black cultures, slavery, folklore, or film. (Limited to 12 students.)

91. Research and Methodology in Black Studies
(4) ROBINSON

Prerequisite: consent of instructor.

Using Black studies topics, introduces students to weaknesses and strengths of quantitative and qualitative methodologies. Emphasizing the impact surveys have on the formulation of public or private policy, course will help students to use computers as research tools.

UPPER DIVISION

100. Africa and United States Foreign Policy
(4) MCAULEY, HADJOR

Prerequisite: upper-division standing.

Post-World War II Africa and United States foreign policy. Special attention will be devoted to southern Africa and parallels between social movements in that part of the world and the United States civil rights movement.

102. Black Radicals and the Radical Tradition
(4) KENNEDY, MADISON

Prerequisite: upper-division standing.

This course will examine the tradition of radical thought and the relevance of this thought to the needs and interests of the Black community.

103. The Politics of Black Liberation—The Sixties
(4) KENNEDY, MADISON

Prerequisite: upper-division standing.

The origins of various Black liberation organizations and their ideologies and strategies in the 1960s. Study of grass roots organizations and their struggles sheds light on the developments that occurred when this movement encountered the intransigence of entrenched American racism.

104. Black Marxism
(4) ROBINSON, DURAN

Prerequisite: Black Studies 3 or 5.

A theoretical explication and critique of the diverse Marxian analyses developed in Africa and the African Diaspora from the early 20th century. The course will trace and analyze the divergences of Black Marxisms from Western Marxism.

107. Women, Power and Politics
(4) KENNEDY

Prerequisite: upper-division standing.

The course covers historical and current issues dealing with the empowerment of African-American women, the impact of social conditions and public policies, and the strategies they used to meet the challenges of their lives.

120. Religious Systems in Africa
(4) STAFF

Prerequisite: upper-division standing; a prior course in Black Studies.

Not open for credit to students who have completed Religious Studies 122.

A survey of the various religious traditions of the African Continent.

121. The Black Family in the United States
(4) OYEWUMI

Prerequisite: upper-division standing.

A developmental analysis of the role and significance of family life in the Black experience. Particular attention will be paid to the various forces that have influenced the structural and behavioral aspects of family life among Black Americans.

122. The Education of Black Children
(4) MICHEL

Prerequisite: upper-division standing.

The social and intellectual development of Black children and their unique psychological and social needs. Informal and formal learning experiences within families, schools are explored. The urban schools and classroom situations of the contemporary African-American communities are also examined.

127. Black Women Writers
(4) BERRY

Prerequisite: upper-division standing.

Analyses of the works of Afro-American women writers from slavery to modern times, the unique problems faced by them, the concerns upon which they focus, the milieu that produced them, their triple consciousness, and the critical reception accorded them.

130A. Negritude and African Literature
(4) PIGEON

Prerequisite: upper-division standing.

Recommended preparation: Black Studies 1 or 3 or 7.

History of French-African literature with emphasis on its development in Africa and the West Indies; the concept of negritude from its birth to the present.

130B. French African Literature
(4) PIGEON

Prerequisite: upper-division standing.

Recommended preparation: Black Studies 1 or 3 or 7.

A study of the ideologies and tendencies which appeared simultaneously in Africa and the French West Indies after the independence of Africa. Writers studied include Mongo Beti, Camara Laye, Aime Cesaire, Ferdinand Oyono, and Ousmane Sembene.

133. Reconceptualizing Gender in African Studies
(4) OYEWUMI

Prerequisite: upper-division standing.

Gender is first and foremost a social construction. Its conceptualization should start with local structures. This course looks to African societies instead of the West for the interpretation of gender.

134. Language and Culture in the African Diaspora
(4) DAVIS

Prerequisite: upper-division standing.

Same course as Linguistics 136.

Examination of the linguistic and cultural consequences of contact between blacks and other ethnic groups throughout the Americas. Topics include multilingualism, dialects, creoles, and cultural hybridization. Geographic areas surveyed include North America, Latin America, and the Caribbean.

136. Black Feminist Thought
(4) OYEWUMI

Prerequisite: upper-division standing.

The "Politics of Difference" has emerged as the dominant theme of feminism. Its origins can be located in the writings of the African American feminist writers studies in this course: Davis, Lorde, Christian, Walker, Carby, Collins, Hooks, Smith, Lardner, and Jordan.

137E. Sociology of the Black Experience
(4) OYEWUMI

Prerequisites: upper-division standing.

Same course as Sociology 137E.

This course will give a sociological overview of the experiences of Blacks in the United States from slavery to the present. Sociological analysis of the changing historical significance of Black poverty, the Black family, and the Black worker in the U.S. will be presented.

140E. Islam in America
(4) STAFF

Prerequisite: upper-division standing; a prior course in Black Studies.

Same course as Religious Studies 140E.

Examines Islam in American setting, from introduction by African slaves and immigrants from Islamic countries, to transformation into the Black Muslim movement, to rise as one of the leading non-Christian religions in the United States during the 1970s and 80s.

142. Music in Afro-American Cultures: U.S.A.
(4) STEWART

Prerequisite: upper-division standing.

Introduction to the music of Afro-Americans in the U.S.A. from the antebellum era to the present, including folk, religious, popular, and classical music forms. The sociology of Black music in America will form the basis for lectures and discussions.

145. Jazz and Popular Culture
(4) DANIELS, STEWART

Prerequisite: upper-division standing.

Students who received credit for Black Studies 114 (Jazz and Popular Culture) may not take this course for credit. Students who received credit for Black Studies 114 (History of Jazz) may take this course for credit.

An examination of the evolution of the music from the swing era to the present and of its impact on forms of popular expression—dance, styles of dress, slang, film, and literature in the United States and abroad.

150. Masterpieces in Black Music Literature
(4) STEWART

Prerequisite: upper-division standing.

This seminar introduces to students the world of masterfully composed musical composition written principally by composers of African descent. The specific literature to be discussed ranges from the eigheenth to the twentieth centuries, and include works from both the Euro-classical and Afro-vernacular traditions.

152. Music of the African Diaspora
(4) STEWART

Prerequisite: upper-division standing.

A survey of selected African derived musical traditions from the Caribbean, North and South America, and Africa.

153. Black Popular Music in America
(4) STEWART

Prerequisite: upper-division standing.

A critical survey of African American popular styles since 1950. The course is style specific, but will also address the music's relationship to other aspects of popular culture.

160. Analyses of Racism and Social Policy in the United States
(4) MADISON, KENNEDY

Prerequisite: Black Studies 1 or 2.

In-depth analysis of the history, ideological, and scientific origins of racism in the United States from the nineteenth century. The effects of institutional racism on social policy, desegregation, integration, and affirmative action programs will also be examined.

161. Third World Cinema
(4) AKUDINOBI

Prerequisite: Film Studies 46 or upper-division standing.

Same course as Film Studies 161.

This course studies representative films from Africa, Asia, and Latin America from the 1950s to the present. Explores the socio-cultural and aesthetic dimensions of these cinemas (which have emerged as the "other" of Hollywood and European cinema).

162. African Cinema
(4) AKUDINOBI

Prerequisite: upper-division standing.

Critical perspectives on African cinema from its inception to the present. Production contexts, aesthetic/narrative strategies, ideological/representational concerns will be examined along with issues of authorship, culture, gender, identity, post-coloniality, etc.

165. African Civilizations
(4) DANIELS

Prerequisite: Black Studies 3 or 5.

Using different historical methods and texts, this course traces the evolution of the peoples of Egypt, Nubia, Ethiopia, Mali, and Zimbabwe and evaluates the significance of their civilizations.

166. History of the Swahili
(4) DANIELS

Prerequisite: Black Studies 3 or 5.

History of Swahili people from their origins to present. Analysis of Bantu heritage, significance of Islam, nature of Kiswahili language, trade and contact with Arabia and Asia, effects of Portuguese and Omani control, and independence movements.

169AR-BR-CR. Afro-American History
(4-4-4) DANIELS

Prerequisite: Black Studies 1 or 5 or History 17A or 17B or 17C or upper-division standing.

Same course as History 169AR-BR-CR. Black Studies 169AR not open for credit to students who have completed Black Studies 169A. Black Studies 169BR not open for credit to students who have completed Black Studies 169B.

Influence/experience of Africans/African Americans in United States history.

AR. Origins and development of slavery and racism in British Colonies.

BR. Nineteenth-century expansion of slavery, Anti-slavery, Civil War, Reconstruction and development of segregation.

CR. Twentieth-century New South, urban migration and desegregation.

170. Afro-Americans in the American Cinema
(4) ROBINSON

Prerequisite: upper-division standing.

An examination of the representation of Afro-Americans in the Hollywood feature film, from 1915 to the present. The course explores the relationship between screen icons and the racial attitudes held by Black and White Americans.

171. Africa in Film
(4) AKUDINOBI

Prerequisite: upper-division standing.

The purpose of this course is to provide an understanding of African cultures, traditions, and politics as depicted by African and non-African filmmakers. Students will explore stereotypical as well as positive and romantic images of Africa. Films: semi-documentaries, documentaries, fiction.

172. Contemporary Black Cinema
(4) ROBINSON

Prerequisite: upper-division standing.

The course explores the new directions in Afro-American cinema with emphasis on the directors, the aesthetics and the social content of contemporary Black film. The problems of production, distribution and exhibition will be examined.

191AA-ZZ. Special Topics in Black Studies
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units provided letter designations are different (only 12 units may be applied toward the major).

Designed to broaden opportunities for students by offering varying topics related to the Black experience.

BB. The Political Uses of Race: McAuley
DD. Creole Language, Culture, and Society: Davis
GG. Racial Implications of U.S. Substance Abuse Policy
I. Black Philosophy and Social Theory: Staff
J. Creole Language and Identity: Davis
KK. African American English
U. Television and Socialization of the Black Child: Michel
V. Images of Blacks in Popular Culture: Pigeon
W. Afro-American Soldier: Madison
X. Racism, Sports and Politics: Madison
Z. Black Women's Consciousness: Staff

193AA-ZZ. Seminars in Black Studies
(4) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 12 units provided letter designations are different (only 8 units may be applied toward the major).

Seminars will focus on a specific topic chosen by the professor and will involve in-depth reading of a number of works and the writing of a paper on a subject chosen in consultation with the instructor.

A. Malcolm X and His Times: Daniels
AA. Racism, Law, and the Constitution: Madison
B. Afro-American History: Daniels
BB. Black American Writers in Paris: Berry
C. Caribbean Women Writers: Staff
CC. Verbal Art of Afro-American Women: Davis
D. C.L.R. James and the World System: Robinson
E. Children's Literature/Storytelling: Michel
EE. Seminar on Black Feminism: Oyewumi
F. Aimé Césaire: Pigeon
FF. Early Black Writers and Abolitionists in Britain: Staff
G. The Marcus Garvey Movement: Madison
HH. History and Society in Cuba: Staff
I. Blacks in the Military: Madison
II. Blacks in Silent Film: Robinson
J. Langston Hughes: Berry
JJ. Thomas Jefferson and Sally Hemings: Literature of the Controversy: Berry
K. Africa in Black and White: Pigeon
L. History of the Black Athlete In the U.S.: Madison
M. Kenyan Nationalism: Daniels
N. Black Women as Creators of Culture: Michel
O. The Black Experience Through Video Production: Michel
Q. Religious Signs/Symbols in Afro-American Art and Literature: Staff
S. Political Violence: Madison
T. Africa and Colonization: Oyewumi
U. Harlem Renaissance: Berry
V. Richard Wright: Berry
W. Radical African Political Thought: Hadjor
X. African American Artists and Images in the Smithsonian Institutions: Content/Context/Construct: Smith
Y. The Black Worker Since the Civil War: McAuley
Z. African American Writers Abroad: Nineteenth and Twentieth Century: Berry

194. Group Research in Black Studies
(4) MICHEL
Prerequisites: upper-division standing and consent of instructor.
May be repeated for credit provided topic and/or instructor are different.
A limited number of students (5-8) shall focus on a selected topic, each researching one aspect of, for example, Black student life at UCSB.

195A-B-C. Honors Thesis Seminar in Black Studies
(4-4-4) STAFF
Prerequisites: senior standing and consent of department.
Must have a 3.3 university grade-point average; 3.5 departmental grade-point average; A three-quarter in-progress sequence course with grades for all three quarters issued upon completion of the final quarter.
Each student, under the direction of the department chair, will identify a research topic and map out a research project with the appropriate faculty member(s). Research will begin in fall and continue more intensely during winter. Research papers will be completed in spring with a formal presentation before an audience of faculty, graduate and undergraduate students in Black studies.

196. Bibliographic Methods in Black Research
(4) STAFF
Prerequisite: upper-division standing.
Methods of obtaining information on the Black experience, utilizing written, multimedia, and other sources, with emphasis on Afro-American materials, but also covering Africa, the Caribbean, and other parts of the diaspora.

197. Field Research
(1-8) MICHEL
Prerequisites: upper-division standing; consent of department.
Must have a 3.0 overall grade-point average.
Directed field research on a topic in Black studies.

198. Readings in Black Studies
(4) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Black studies.
Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Enrollment limited. Reading and discussion will be centered around a single topic or problem to be announced in advance by the instructor.

199. Independent Studies in Black Studies
(1-4) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Black Studies; consent of department.
Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

199RA. Independent Research Assistance in Black Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Black Studies; consent of instructor and department.
Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99198/199/199RA courses combined.
Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

205. Methodology of Black Culture
(4) ROBINSON, DANIELS
Prerequisite: B.A. degree.
This course is to acquaint the student with the concepts, theories, norms, world-view, theses, laws, etc. which the mind has to follow to arrive at the validity of Black cultural expressions.

206. Graduate Proseminar
(4) STAFF
Prerequisite: graduate standing. Completion of at least 12 upper-division units related to the subject matter of the course.
Critical inquiry based on dissertation related research addressing several issues in the curricular development of Black Studies: research writing, formal presentation, postdoctoral programs, revision, and journal publication process.

222. Black Child Development
(4) MICHEL
Prerequisite: graduate standing.
An exploration of theories and models focusing on differential development as influenced by socio-cultural and ethnic variability. The emphasis will be on the social-emotional and cognitive development of Black children.

501. Teaching Methodology in Black Studies
(1-4) ROBINSON, MICHEL
Prerequisite: appointment as T.A. in Black studies.
For graduate students who serve as teaching assistants: analyses of texts and materials; discussion of teaching techniques; conducting discussion sections; formulation of topics and questions for papers and examinations; and grading papers and examinations under supervision of instructor.

596. Directed Reading and Research
(2-5) STAFF
Prerequisite: graduate standing. May be repeated for credit on approval of chair.
Individual tutorial. Plan of study must be approved by department chair.

598. Master's Thesis Research and Preparation
(2-8) STAFF
Prerequisite: consent of instructor.
To assist graduate students who are doing research or writing their dissertation in African area studies and/or Black studies.

Chemistry and Biochemistry

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Faculty

Curtis B. Anderson, Ph.D., UC Los Angeles, Associate Professor (organic chemistry)

Donald H. Aue, Ph.D., Cornell University, Associate Professor (organic chemistry)

Guillermo C. Bazan, Ph.D., Massachusetts Institute of Technology, Professor (organic chemistry)

Michael T. Bowers, Ph.D., University of Illinois, Professor (physical chemistry)

Paula Yurkanis Bruice, Ph.D., University of Virginia, Senior Lecturer with Security of Employment (bio-organic chemistry)

Steven Buratto, Ph.D., California Institute of Technology, Assistant Professor (physical chemistry)

Alison Butler, Ph.D., UC San Diego, Professor (bio-inorganic chemistry)

Anthony Cheetham, Ph.D., Oxford University, Professor (inorganic chemistry/materials)

Timothy J. Deming, Ph.D., UC Berkeley, Associate Professor (organic chemistry)

Peter C. Ford, Ph.D., Yale University, Professor (inorganic chemistry)

J. Thomas C. Gerig, Ph.D., Brown University, Professor (bio-organic chemistry)

David O. Harris, Ph.D., UC Berkeley, Professor (physical chemistry)

Thomas M. Hooker, Jr., Ph.D., Duke University, Professor (biophysical chemistry)

William C. Kaska, Ph.D., University of Michigan, Professor (inorganic chemistry)

Bernard Kirtman, Ph.D., Harvard University, Professor (theoretical physical chemistry)

Bruce H. Lipshutz, Ph.D., Yale University, Professor (organic chemistry)

R. Daniel Little, Ph.D., University of Wisconsin, Professor (organic chemistry)

Horia I. Metiu, Ph.D., Massachusetts Institute of Technology, Professor (theoretical physical chemistry)

Stanley M. Parsons, Ph.D., California Institute of Technology, Professor (biological chemistry)

John Perona, Ph.D., Yale University, Assistant Professor (biological chemistry)

Thomas R. R. Pettus, Ph.D., University of Rochester, Assistant Professor (organic chemistry)

Kevin W. Plaxco, Ph.D., California Institute of Technology, Assistant Professor (biological chemistry)

Norbert O. Reich, Ph.D., UC San Francisco, Professor (biological chemistry)

Bruce Rickborn, Ph.D., UC Los Angeles, Professor (organic chemistry)

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Galen Stucky, Ph.D., Iowa State University, Professor (inorganic chemistry)

Petra A. M. Van Koppen, Ph.D., UC Santa Barbara, Lecturer, Lab coordinator (physical chemistry)

Richard J. Watts, Ph.D., University of Colorado, Professor (inorganic chemistry)

Alec M. Wodtke, Ph.D., UC Berkeley, Professor (physical chemistry)

Emeriti Faculty

Thomas C. Bruice, Ph.D., University of Southern California, Research Professor

Clifford A. Bunton, Ph.D., University College (London), Professor Emeritus (organic chemistry)

John H. Kennedy, Ph.D., Harvard University, Professor Emeritus (inorganic/analytical chemistry)

Richard M. Martin, Ph.D., University of Wisconsin, Professor Emeritus (physical chemistry)

Roger C. Millikan, Ph.D., UC Berkeley, Professor Emeritus (physical chemistry)

Henry W. Offen, Ph.D., UC Los Angeles, Professor Emeritus (physical chemistry)

Ralph G. Pearson, Ph.D., Northwestern University, Professor Emeritus (inorganic chemistry)

Glyn O. Pritchard, Ph.D., Manchester University, Professor Emeritus (physical chemistry)

The majors in chemistry and biochemistry provide excellent undergraduate preparation for careers in chemical research, teaching, medicine, law, technical management, and environmental fields. The Department of Chemistry offers programs leading to either the B.S. or the B.A. degree. The requirements of the B.A. program do not meet standards for certification by the American Chemical Society (ACS), but three additional courses may be taken to meet certification standards. (See below for B.A. in Chemistry). The requirements of the B.S. program meet American Chemical Society standards for certification with appropriate choices of upper-division electives. Students need to consult the senior faculty advisor. The B.S. degrees are intended for students interested in a career whose primary focus is chemistry or a chemistry-related science, including medicine, biochemistry, and materials science as well as graduate work in chemistry.

The B.A. degree offers flexibility and is intended for students interested in a career with a significant chemical-related component such as environmental science, law, K-12 education, or business. Students should discuss these options with an advisor in the department.

Entering chemistry and biochemistry majors will be assigned an advisor who may be consulted on any matter pertaining to departmental activities, including waivers and substitutions of major requirements. Students must submit their programs to the advisor for approval.

Students with a bachelor's degree in chemistry who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Prizes, Honors, Loan Fund

The Willard L. McRary Prize in Chemistry is given to a graduating senior whose work in chemistry reflects the promise of outstanding scientific achievement, such as that which characterized the career of Professor McRary. The B. R. Baker Memorial Fellowship in Chemistry is awarded to graduate students who have given strong indication, by their graduate or undergraduate record, that they will make continued and substantial contributions to the progress of organic, medicinal, or biological chemistry. The Robert H. DeWolfe Teaching Fellowship is awarded to a graduate student in organic chemistry who has demonstrated excellence in undergraduate instruction. The John H. Tokuyama Memorial Scholarship is awarded annually to an organic chemistry graduate student.

Distinction in the Major: Students who have achieved a grade-point average of 3.5 or above in their chemistry courses and who submit a written report of their original research carried out under the guidance of a faculty member and approved by one additional member of the faculty shall be designated as having achieved a *Distinction in the Major*. Students contemplating this option should advise the departmental undergraduate staff advisor of their intention at the beginning of their senior year.

Senior Honors Program

The senior honors program is available to students with outstanding academic records. The program includes carrying out research (through Chemistry 199) in one of the departmental research groups, presenting a seminar describing this work, and preparing a written research report or thesis. Applications to the honors program should be made to the senior advisor, early in the fall quarter of the senior year.

Undergraduate Program

Bachelor of Science—Biochemistry

Preparation for the major. Chemistry 1A-B-C, 1AL or 1AC, 1BL or 1BC, 1CL or 1CC (or 2A-AL, 2B-BL, 2C-CL), 6A-B or 6A-7B; Mathematics 3A-B-C, Mathematics 5A; Physics 6A-B-C and labs; MCDB 1A-1AL-1B, EEMB 2, and either MCDB 1BL or EEMB 2L.

Upper-division major. Fifty-six upper-division units, including Chemistry 107A-B and 108 (130A-B-C also acceptable); 112-112L; 113AB; 125L; 142A-B-C; 173A; MCDB 109L. The remaining 11 major units will include 6 units from Chemistry 145, 146, 161, 162, 171, 181 and 5 additional units from: Chemistry 111, 115A-B-C, 117, 118, 120, 123, 126 (if 145 is not taken), 131A-B-C, 145, 150, 161, 171, 173B, 175, 176, 181.

Note: Transfer students receiving subject credit for Chemistry 130 or 107A-B and 108 as lower-division courses must complete a minimum of 44 upper-division units in chemistry.

Bachelor of Science—Chemistry

Preparation for the major. Chemistry 1A-B-C, 1AL or 1AC, 1BL or 1BC, 1CL or 1CC (or 2A-AL, 2B-BL, 2C-CL), 6A-B-C or 6A, 7B-C; Mathematics 3A-B-C, Mathematics 5A-B; Physics 1, 2, 3, 4, 3L, 4L are required. A reading knowledge of a foreign language is strongly recommended (German is particularly useful), but not required, for students planning advanced study in science.

Upper-division major. Fifty-four upper-division units, including Chemistry 130A-B-C, 113A-B-C, 113BL, 113CL, 150, 150L, and 173A-B, are required. The 12 elective major units may not include 101 and will normally include two physical chemistry courses, one organic or biological chemistry course, and one upper-division laboratory course. Courses should be chosen after consultation with the junior or senior advisor. It is strongly recommended that Chemistry 173A be taken before Chemistry 173B. Transfer students who receive subject credit for Chemistry 130 and/or 150 must earn at least 44 upper-division units in chemistry. Completion of sufficient units of Chemistry 7B-C or Chemistry CS 7 will be considered equivalent to Chemistry 136 and Chemistry 136L and can be used to fulfill the upper-division chemistry laboratory requirement for the B.S. degree.

Bachelor of Arts—Chemistry

Preparation for the major. Chemistry 1A-B-C, 1AL or 1AC, 1BL or 1BC, 1CL or 1CC (or 2A-AL-B-BL-C-CL), 6A-B or 6A and 7B; Mathematics 3A-B-C. Physics 1, 2, 3, 4, 3L, 4L, or Physics 6A-B-C, 6AL-BL-CL are required. It is recommended but not required that Mathematics 5A be completed before taking Chemistry 113A-B-C. A reading knowledge of a foreign language is strongly recommended (German is particularly useful), though not required, for students planning advanced study in science.

Upper-division major. Thirty-nine to 40 upper-division units, including Chemistry 130A-B-C, 113A-B-C, 113BL or 113CL, 150, 150L, 173A. One chemistry elective (at least 3 units excluding 101 and 199) is required to complete the major. With approval of the junior or senior advisor, Chemistry 107A-B, 108 may be substituted for Chemistry 130A-B-C, but an additional upper-division course worth at least 3 units must be taken, excluding Chemistry 101. This course must be approved for the student's specific plan of study by that advisor. B.A. students who take Chemistry 107A-B, 108 cannot take Chemistry 130A-B-C for degree credit following completion of 107A-B, 108.

Students should consult an advisor in the Department of Chemistry regarding possible substitutions. Transfer students who receive subject credit for Chemistry 130 and/or 150 because they completed equivalent lower-division courses elsewhere must earn at least 36 upper-division units in chemistry.

The B.A. degree in chemistry will meet the standards recommended by the American Chemical Society (ACS) for professional

education in chemistry provided the student completes three additional courses in chemistry, including two laboratory courses (Chemistry 6C may be used for partial fulfillment of this requirement). Students need to consult the senior advisor in regard to ACS certified degrees.

Cooperative Program—Chemistry and Chemical Engineering

Chemistry students who are interested in an industrial career are advised to consider a five-year program leading to B.S. degrees in both chemical engineering and chemistry. Students in the cooperative program are required to register simultaneously in the College of Letters and Science and the College of Engineering. They are responsible for completing all degree requirements for each college.

Department of Chemistry requirements for the program include Chemistry 1A-B-C, 1AL-BL-CL, 6A-B-C, 130A-B-C, 150, 150L, 113B-C, 113BL or 113CL, 173A, and two additional upper-division courses in chemistry. Mathematics 3A-B-C, 5A-B-C, Physics 1 (or Mechanical Engineering 10), and Physics 3, 4, 3L, 4L are also required.

Interested students may obtain more information about the program from the Department of Chemistry or the Department of Chemical Engineering. Final admission to the program is subject to the approval of the dean or provost of each college.

Minor—Chemistry

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in chemistry and those offered by other departments and applied to the minor.

Preparation for the minor. No specific courses are required for the minor in chemistry, but students should note that most upper-division chemistry courses include Chemistry 1A-B-C as prerequisite, and many require mathematics courses through 5A as prerequisite.

Upper-division minor. Twenty upper-division units, including at least one course (4 units) in physical chemistry (Chemistry 113A or 113B or 113C); and 16 units of additional upper-division chemistry courses (Chemistry 101 may not apply).

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

Admission

The M.S., M.A., or Ph.D. degrees in chemistry may be obtained in any one of the special fields of analytical, biological, inorganic, organic, materials, physical, or theoretical chemistry. In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB." In addition to fulfilling the departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." *Graduate Study in Chemistry*, a publication containing admission and degree requirements, is available upon request from the Department of Chemistry.

Applications are accepted all year long for fall, winter, and spring quarters. However, January 15, is the priority deadline for fall applications and for campuswide fellowship competition.

Master of Science or Master of Arts—Chemistry

The M.S. in chemistry may be attained under Plan 1 (thesis based on research). The M.A. in chemistry may be obtained under Plan 2 (examination). The student must present a literature-based seminar to the department (both plans). The Department of Chemistry emphasizes graduate work leading to the Ph.D.

Doctor of Philosophy—Chemistry

The Ph.D. degree in chemistry will be awarded upon the successful completion of the following requirements: (1) a core curriculum; (2) two preliminary evaluations; (3) a seminar presentation unrelated to the dissertation research field; (4) the Ph.D. oral qualifying examination for advancement to candidacy; and (5) submission and successful defense of a research dissertation. The main features and time schedule of these requirements are briefly summarized below; a complete document is available in the department.

A six-course curriculum is established with and approved by the divisional academic advisor and normally completed during the first year. Several additional elective courses will be taken during the first and second year. The two preliminary evaluations include written examinations, propositions, and cumulative examinations, depending on the division. Typically, all requirements and the seminar presentation must be completed before the Ph.D. oral qualifying examination. The Ph.D. qualifying oral examination, which focuses on the student's dissertation research field, is usually scheduled for the end of the sixth quarter.

Ph.D. candidates will prepare and defend a dissertation detailing an original work of research in their field of specialization.

Interdepartmental Graduate Program in Biochemistry and Molecular Biology

For details see catalog entry under Biochemistry and Molecular Biology.

Chemistry Courses

LOWER DIVISION

1A. General Chemistry
(3) STAFF
Prerequisite: Chemistry 1AC or 1AL (may be taken concurrently).
Recommended preparation: high-school algebra, chemistry and physics. Lecture, 3 hours.
Stoichiometry, gas laws and kinetic theory, atomic and molecular structure, the periodic table, nature of solids, liquids and solutions, phase equilibria.

1AC. General Chemistry Cooperative Laboratory
(1) VAN KOPPEN
Prerequisite: concurrent enrollment in Chemistry 1A.
Not open for credit to students who have completed Chemistry 1AL or 2AL. Lab fee required. Laboratory, 4 hours.
Quantitative and qualitative measurements demonstrating principles and developing laboratory technique. Students work in small groups to develop a unique perspective of the experiment.

1AL. General Chemistry Laboratory
(1) VAN KOPPEN
Prerequisite: Chemistry 1A (may be taken concurrently).
Not open for credit to students who have completed Chemistry 1AC or 2AL. Lab fee required. Laboratory, 4 hours.
Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

1B. General Chemistry
(3) STAFF
Prerequisites: Chemistry 1A and, Chemistry 1AC or 1AL; or Chemistry 2A-AL; and, Chemistry 1BC or 1BL (may be taken concurrently).
Recommended preparation: high-school algebra, chemistry and physics. Lecture, 3 hours.
Thermodynamics (1st and 2nd laws), reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium.

1BC. General Chemistry Cooperative Laboratory
(1) VAN KOPPEN
Prerequisites: Chemistry 1A and, 1AC or 1AL; or, Chemistry 2A and 2AL; and, concurrent enrollment in Chemistry 1B.
Not open for credit to students who have completed Chemistry 1BL or 2BL. Lab fee required. Laboratory, 4 hours.
Quantitative and qualitative measurements demonstrating principles and developing laboratory technique. Students work in small groups to develop a unique perspective of the experiment.

1BL. General Chemistry Laboratory
(1) VAN KOPPEN
Prerequisites: Chemistry 1A and, 1AC or 1AL; or, Chemistry 2A and 2AL; and, Chemistry 1B (may be taken concurrently).
Not open for credit to students who have completed Chemistry 1BC or 2BL. Lab fee required. Laboratory, 4 hours.
Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

1C. General Chemistry
(3) STAFF
Prerequisites: Chemistry 1B and, Chemistry 1BC or 1BL; or, Chemistry 2B-BL; and, Chemistry 1CC or 1CL (may be taken concurrently).
Recommended preparation: high-school algebra, chemistry and physics. Lecture, 3 hours.
Structure and dynamics of elements and their compounds. Aspects of technology and environmental problems.

1CC. General Chemistry Cooperative Laboratory
(1) VAN KOPPEN
Prerequisites: Chemistry 1B and, 1BC or 1BL; or, Chemistry 2B and 2BL; and, concurrent enrollment in Chemistry 1C.
Not open for credit to students who have completed Chemistry 1CL or 2CL. Lab fee required. Laboratory, 4 hours.
Quantitative and qualitative measurements demonstrating principles and developing laboratory technique. Students work in small groups to develop a unique perspective of the experiment.

1CL. General Chemistry Laboratory
(1) VAN KOPPEN
Prerequisites: Chemistry 1B and, 1BC or 1BL; or, Chemistry 2B and 2BL; and, Chemistry 1C (may be taken concurrently).
Not open for credit to students who have completed Chemistry 1CC or 2CL. Lab fee required. Laboratory, 4 hours.
Quantitative measurements demonstrating

principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

2A. General Chemistry (Honors)
(3) STAFF

Prerequisite: Chemistry 2AL (may be taken concurrently).

Not open for credit to students who have completed Chemistry 1A.

Recommended preparation: high-school chemistry or physics, one quarter of calculus (may be taken concurrently). Lecture, 3 hours.

Enrollment will be limited to 40 students. The sequence of topics will be similar to that in Chemistry 1A. Calculus will be used as needed, at the level of the concurrent Mathematics 3A course.

2AC. General Chemistry Laboratory (Honors)
(1) STAFF

Prerequisite: Chemistry 2A (may be taken concurrently).

Lab fee required. Laboratory, 3 hours.

Quantitative measurements demonstrating principles and developing laboratory technique.

2B. General Chemistry (Honors)
(3) STAFF

Prerequisites: Chemistry 2A and 2AL; or, Chemistry 1A and, Chemistry 1AL or 1AC with a grade of B or better; and, Chemistry 2BL (may be taken concurrently). Lecture, 3 hours.

Thermodynamics, reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium. Laboratory required.

2BC. General Chemistry Laboratory (Honors)
(1) STAFF

Prerequisites: Chemistry 2A, and 2AL or 2AC; or, Chemistry 1A, and Chemistry 1AL or 1AC with a grade of B or better; and, Chemistry 2B (may be taken concurrently).

Lab fee required. Laboratory, 3 hours.

Laboratory techniques. Thermodynamics, reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium.

2C. General Chemistry (Honors)
(3) STAFF

Prerequisites: Chemistry 2B and 2BL; or, Chemistry 1B and, Chemistry 1BC or 1BL with a grade of B or better; and, Chemistry 2CL (may be taken concurrently). Lecture, 2 hours.

Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems. Laboratory required.

2CC. General Chemistry Laboratory (Honors)
(1) BUTLER, FORD, STROUSE

Prerequisites: Chemistry 2B, and 2BL or 2BC; or, Chemistry 1B and, 1BC or 1BL with a grade of B or better.

Lab fee required. Laboratory, 3 hours.

Laboratory techniques. Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems.

6A. Laboratory Methods of Organic Chemistry
(2) STAFF

Prerequisite: Chemistry 107A or 130A (may be taken concurrently).

Lab fee required.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, instrumental methods in organic chemistry.

6B. Laboratory Methods of Organic Chemistry
(2) STAFF

Prerequisites: Chemistry 6A; and, Chemistry 107B or 130B (may be taken concurrently).

Lab fee required.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, instrumental methods in organic chemistry.

6C. Laboratory Methods of Organic Chemistry
(2) STAFF

Prerequisites: Chemistry 6B or 7B; and, Chemistry 108 or 130C (may be taken concurrently).

Lab fee required.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, instrumental methods in organic chemistry.

7B-C. Laboratory Methods of Organic Chemistry (Honors)
(2-2) STAFF

Prerequisites: Chemistry 6A; and, Chemistry 107B or 130B (may be taken concurrently): Chemistry 7B for 7C.

Lab fee required. Laboratory, 8 hours.

Topics will be similar to those in Chemistry 6B-C, but with more flexible laboratory hours and more emphasis on instrumental analysis and spectroscopy for the characterization of organic compounds in conjunction with the Chemistry CS 7 course in the College of Creative Studies.

10. Introduction to Chemical Computing
(2) STAFF

Introduction of different computing techniques for computation in UNIX. Applications include: molecular modeling, molecular dynamics, mathematica, Monte Carlo, data analysis, and data mining.

90FS. Freshman Seminar
(2) STAFF

Seminar, 2 hours.

Informal discussion limited to 10 students in each section. Each participating faculty member will conduct one section. Subjects will include current technological and environmental problems, and recent advances in basic and applied chemistry.

91. Undergraduate Seminar
(1) STAFF

Prerequisite: Chemistry 1A or 1B or 2A or 2B (may be taken concurrently).

May be repeated once for credit. Seminar, 1 hour.

Seminars for undergraduates presented by faculty and/or students.

94. Group Studies in Chemistry
(1) HARRIS, BURATTO

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 3 units.

Lecture and discussions on special topics.

99. Introduction to Research
(1-3) STAFF

Prerequisite: consent of instructor.

May be repeated to a maximum of 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Tutorial, 3-9 hours.

Directed study, normally experimental, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research group. Basic techniques and the operation of instruments used in research.

UPPER DIVISION

101. Problems in Environmental Chemistry
(3) STAFF

Prerequisites: Chemistry 1A-B. Lecture, 3 hours.

The chemical aspects of energy sources and their impact on the environment; the chemistry of air, water, and soil pollution; sources and methods of control; chemical dynamics in the environment; chemical quality standards and their maintenance.

103A-B. Combinatorial Methods in Chemistry and Chemical Engineering.
(3-3) MCFARLAND

Same course as Chemical Engineering 103A-B.

Recommended preparation: prior coursework in inorganic and organic chemistry.

Basic methodologies of chemical, biological, and materials research and discovery using automated, high-speed synthesis and screening of large numbers of materials. Emphasis on fundamentals necessary for combinatorial design, synthesis, screening, and analysis.

107A-B. Fundamentals of Organic Chemistry
(3-3) ANDERSON, AUE, P. BRUICE, LIPSHUTZ, LITTLE, PETTUS, RICKBORN

Prerequisites: Chemistry 1A-B-C.

Chemistry 107A not open to credit to students who have completed Chemistry 8A or 130A; Chemistry 107B not open for credit to students who have completed Chemistry 8B or 130B.

Structure and reactivity of organic compounds including nomenclature, isomerism, spectroscopy, catalysis, reaction mechanisms and stereochemistry.

108. Fundamentals of Organic Chemistry
(4) P. BRUICE

Prerequisites: Chemistry 1A-B-C, 107A, 107B.

Not open for credit to students who have completed Chemistry 8C or 130C.

Application of the principles of organic chemistry to biochemical systems: carbohydrates, proteins, enzymes, vitamins and cofactors. Designed primarily for biological science majors.

111. Chemical Kinetics
(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours

The laws and theories governing rates of chemical reactions and reaction mechanisms. Empirical treatment of reaction rates, treatment of data, gas-phase reactions, reactions in solution, catalysis, complex reactions, chain reactions. Collision theory and potential energy surfaces.

112. Biophysical Chemistry
(4) HOOKER, PLAXCO

Prerequisite: Chemistry 113A.

Thermodynamics, kinetics, and quantum chemistry with special emphasis on biological systems. Some examples of special emphasis: diffusion across and within membranes, diffusion along DNA, phase equilibria and protein folding, spectroscopy (fluorescence, mass spectroscopy, FTIR, NMR), electron transfer and hydrogen bonding.

112L. Biophysical and Bioanalytical Laboratory
(3) KOHLSTAEDT

Prerequisites: Chemistry 113A-AL. Lab fee required.

Introduction to the use of modern biophysical techniques. Fluorescence spectroscopy, mass spectroscopy, FTIR, NMR, diffraction techniques, etc. Emphasis is on quantitative analysis.

113A-B-C. Physical Chemistry
(4-4-4) BOWERS, HARRIS, METIU

Prerequisites: Chemistry 1A-B-C; Mathematics 3A-B-C; and Physics 1, 2, 3, 4, 3L, 4L or, 6A-B-C and 6AL-BL-CL. Lecture, 3 hours; discussion, 1 hour.

A. Chemical thermodynamics: laws of thermodynamics, phase equilibria, chemical equilibria, equations of state.

B. Quantum theory and spectroscopy: introduction to quantum mechanics; symmetry, molecular structure, and spectroscopy.

C. Kinetic theory of gases, chemical kinetics, statistical mechanics, photochemistry.

113AG-BG-CG. Physical Chemistry
(4-4-4) BOWERS, HARRIS, METIU

Prerequisites: graduate standing and departmental approval.

Open only by consent of the Chemistry Graduate Advisor to students who have not taken Chemistry 113A-B-C or the respective part thereof in this institution. Lecture, 3 hours; discussion, 1 hour.

113AL. Physical Chemistry Laboratory
(3) WODTKE

Prerequisites: Chemistry 150 and 150L; concurrent enrollment in Chemistry 113A. Lecture, 2 hours; laboratory, 8 hours. Lab fee required.

Lecture: instrumental techniques, data analysis, error analysis, instruction in Mathematica®. Laboratory: Mathematica®, a symbolic programming language, is taught in the computer laboratory.

113BL. Physical Chemistry Laboratory
(3) WODTKE, BURATTO

Prerequisites: Chemistry 150 and 150L; concurrent enrollment in Chemistry 113B.

Not open for credit to students who have completed Chemistry 114A. Lecture, 1 hour; laboratory, 8 hours. Lab fee required.

Lecture: instrumental techniques, data analysis, error analysis, instruction in Mathematica®. Laboratory: experiments on thermochemistry, atomic spectroscopy.

113CL. Physical Chemistry Laboratory
(3) WODTKE, BURATTO

Prerequisites: Chemistry 150 and 150L; concurrent enrollment in Chemistry 113C.

Not open for credit to students who have completed Chemistry 114B. Lecture, 1 hour; laboratory, 8 hours. Lab fee required.

Lecture: instrumental techniques, data analysis, error analysis, instruction in Mathematica®. Laboratory: molecular spectroscopy, ESR spectroscopy, NMR spectroscopy, and X-Ray diffraction experiments. Presentation of methods of data and error analysis.

115A-B-C. Fundamentals of Quantum Chemistry
(3-3-3) KIRTMAN, WODTKE

Prerequisites: Mathematics 5A and Chemistry 113A-B-C. Lecture, 3 hours.

A. Introduction to quantum mechanics-postulatory approach; particle in box, on ring, harmonic oscillator; linear operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory; applications.

B. Molecular orbital theory and valence bond theory; Huckel theory (secular eqn.) applications to conjugated systems. Electronic spectra, and term symbols; introduction to infrared, Raman, and microwave spectroscopy.

C. Introduction to NMR, EPR, group theory; applications.

117. Statistical Thermodynamics
(3) KIRTMAN

Prerequisites: Chemistry 113A-B-C. Lecture, 3 hours.

Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

118. Photochemistry and Radiation Chemistry
(3) BURATTO

Prerequisites: Chemistry 113A-B-C and 150 and 150L. Lecture, 3 hours.

Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

120. Polymer Chemistry
(3) BAZAN, DEMING

Prerequisites: Chemistry 1A-B-C or 2A-B-C; and, Chemistry 107A-B and 108, or 130A-B-C.

Mechanism and kinetics of polymerization: vinyl, condensation, and diene polymers; ionic polymerizations; block and graft polymers; copolymerization; physical chemistry of high polymers; polymer degrations; radiation chemistry of polymer systems.

123. Fundamentals of Environmental Chemistry
(3) KASKA, WATTS

Prerequisites: Chemistry 1A-B; and, Chemistry 1C or 107A or 130A or Environmental Studies 115.

Chemical matters of pollution sources. Principles of analytical monitoring and control of pollution sources. The chemistry of pollutants in the environment. Chemical quality standards and chemical monitoring of the environment.

125L. Laboratory Techniques in Biochemistry
(4) KOHLSTAEDT, PERONA, REICH

Prerequisites: Chemistry 142A-B.

Lab fee required.

Protein chemistry (e.g., double labeling radioisotope analysis, two dimensional PAGE, ELISA, HPLC, FPLC, LC-electrospray mass spectrometry, NMR, and EPR), nucleic acid chemistry (e.g., chemical DNA synthesis, DNA sequencing, PCR-based selection), and enzyme kinetics (e.g., inhibition analyses, coupled enzyme assays).

126. Computational Chemistry
(3) AUE

Prerequisites: Chemistry 130A-B. Lecture, 2 hours; laboratory, 4 hours.

Introduction to computational chemistry and molecular modeling. Application of molecular mechanics, quantum mechanics, and computer graphical interfaces to problems in chemistry, biochemistry, drug design and pharmacology.

130A-B-C. Organic Chemistry
(4-4-4) ANDERSON, AUE, LIPSHUTZ, LITTLE, PETTUS, RICKBORN

Prerequisites: Chemistry 1A-B-C; concurrent enrollment in Chemistry 6A (for Chem 130A): Chemistry 130B and concurrent erollment in Chemistry 6B (for Chem 130B): Chemistry 130C and concurrent erollment in Chemistry 6C (for Chem 130C).

Not open for credit to students who have completed Chemistry 107A-B and 108.

Structure, reactivity, mechanisms, synthesis, nomenclature, and spectroscopic identification of the principal classes of organic compounds as well as organometallics, amino acids, proteins, and carbohydrates. This course is intended for chemistry majors and others requiring a strong basis in organic chemistry (see majors in biochemistry-molecular biology, chemical engineering, pharmacology, physiology, and cell biology).

130AG-BG-CG. Organic Chemistry
(4-4-4) ANDERSON, AUE, LIPSHUTZ, LITTLE, PETTUS, RICKBORN

Open only by consent of graduate advisor to graduate students who have not taken Chemistry 130A-B-C at this institution. Lecture, 3 hours.

131A. Advanced Organic Chemistry
(3) ANDERSON, AUE, LITTLE, LIPSHUTZ, PETTUS, RICKBORN

Prerequisites: Chemistry 130A-B-C; or, Chemistry 107A-B and 108. Lecture, 3 hours.

Physical organic chemistry, mechanism, stereochemistry, structure, and reactivity.

131B. Advanced Organic Chemistry
(3) ANDERSON, AUE, LITTLE, LIPSHUTZ, PETTUS, RICKBORN

Prerequisites: Chemistry 131A. Lecture, 3 hours.

Mechanisms and synthesis in organic chemistry.

131C. Advanced Organic Chemistry
(3) ANDERSON, AUE, LITTLE, LIPSHUTZ, PETTUS, RICKBORN

Prerequisites: Chemistry 131B. Lecture, 3 hours.

Mechanisms and synthesis in organic chemistry.

136. Qualitative Organic Analysis
(2) AUE, LITTLE, RICKBORN, BAZAN, DEMING, PETTUS

Prerequisites: Chemistry 130A-B-C; and, Chemistry 6A-B-C or Chemistry 6A and Chemistry 7B-C. Lecture, 2 hours.

Identification of unknown organic compounds; separation of mixtures; derivatives, instrumental methods; microtechniques.

136L. Qualitative Organic Analysis Laboratory
(2) ANDERSON, BAZAN, RICKBORN

Prerequisites: Chemistry 130A-B-C; and, Chemistry 6A-B-C, or Chemistry 6A and Chemistry 7B-C; and concurrent enrollment in Chemistry 136. Lab, 8 hours.

Qualitative organic analysis laboratory

140A. Synthetic Methods in Chemistry
(3) KASKA, STROUSE

Prerequisites: Chemistry 6A-B-C or Chemistry 6A and 7B-C; and, Chemistry 150 and 150L.

Not open for credit to students who have completed Chemistry 140. Lab fee required.

Synthesis and characterization of inorganic, organic, organometallic, polymeric and bio-materials. Focus on advanced laboratory techniques used in a research setting.

140B. Synthetic Methods in Chemistry
(3) KASKA, STROUSE

Prerequisites: Chemistry 140A.

Not open for credit to students who have completed Chemistry 140. Lab fee required.

A continuation of Chemistry 140A with an emphasis on different synthetic methods for the preparation of selected materials. The analytical methods of X-Ray, mass spectroscopy, and NMR spectroscopy will be used for characterization.

142A. Chemical Aspects of Biological Systems
(3) REICH, PERONA, KOHLSTAEDT, PARSONS

Prerequisites: Chemistry 130A-B-C; or, Chemistry 107A-B and 108. Lecture, 3 hours.

Macromolecules of biological importance. A survey of the physical and chemical properties of proteins, nucleic acids, and carbohydrates. Methods of preparation, chemical synthesis, degradation, and characterization of bio-molecules.

142B. Chemical Aspects of Biological Systems
(3) PARSONS, REICH, PERONA, KOHLSTAEDT

Prerequisites: Chemistry 130A-B-C; or, Chemistry 107A-B and 108; and Chemistry 142A. Lecture, 3 hours.

Chemical aspects of intermediary metabolism. The chemistry and elementary dynamic properties of enzymes; study of enzyme active sites; characterization of metabolic pathways and methods of examining cellular regulation.

142C. Chemical Aspects of Biological Systems
(3) PARSONS, REICH, PERONA, KOHLSTAEDT

Prerequisites: Chemistry 130A-B-C; or, Chemistry 107A-B and 108; and Chemistry 142A-B. Lecture, 3 hours.

Macromolecular biosynthesis and specialized cellular processes. A survey of nucleic acid and protein biosynthesis, characterization of lipids and membranes; function of membranes in transport, energy transduction, and cellular control; mechanisms of muscle contraction and cell motility.

145. Computational Biochemistry
(3) GERIG, KOHLSTAEDT, PERONA

Prerequisites: Chemistry 113A-AL and 112; or, Chemistry 113B-C and Chemistry 142A-B-C; or, MCDB 108A-B-C.

Introduction to molecular modeling and molecular dynamics. Discussion of practical considerations of energy minimization, solvent modeling, structure-based drug design. Practical computer graphics experience.

146. Membrane Biochemistry
(3) PARSONS, REICH

Prerequisites: Chemistry 142A-B-C; or MCDB 108A-B-C.

Introduction to the structures and roles of lipids and their phase behavior, liposomes, membrane proteins and kinetics, protein sorting, and signal transduction.

150. Analytical Chemistry
(3) BURATTO, STROUSE

Prerequisites: Chemistry 1A-B-C or 2A-B-C; and concurrent enrollment in Chemistry 150L. Lecture, 3 hours.

Principles of analytical chemistry including classical techniques, spectrophotochemistry, electroanalytical techniques, and separation processes.

150L. Analytical Chemistry Laboratory
(3) BURATTO, STROUSE

Prerequisites: Chemistry 1A-B-C or 2A-B-C; and concurrent enrollment in Chemistry 150. Laboratory, 8 hours. Lab fee required.

Students will perform experiments in several areas of analytical chemistry including gravimetric, volumetric, electroanalytical, spectrophotometric, and separation techniques. Analyses of water, blood, consumer products, and industrial alloys are carried out.

153. Advanced Analytical Techniques
(3) STROUSE

Prerequisite: Chemistry 150. Lecture, 2 hours; laboratory, 4 hours. Lab fee required.

Principles of analytical methodology, as in

spectroscopy, electronanalysis, and chromatography. Applications to environmental problems, forensic and clinical analysis, and industry. Analysis of solids and surfaces.

156A. Physical Biochemistry
(5) STAFF

Prerequisites: Chemistry 113AL, 113C, and 142C.

Same course as BMB 156A. Lecture, 5 hours; discussion, 1 hour.

Isolation and structural analysis of biomolecules, hydrodynamics, spectroscopy, diffraction, scattering.

161. Enzyme Mechanisms
(3) REICH

Prerequisites: Chemistry 142A-B-C; or MCDB 108A-B-C.

Chemistry, structure and function of enzymes; theory, experimental design, and data analysis. Enzyme models and non-classical enzymes.

162. Drug Design
(3) REICH

Prerequisites: Chemistry 142A-B-C; or MCDB 108A-B-C.

Rational drug design. Active site-directed and mechanism-based inhibitors. The use of computers and energy calculations on the design of drugs. Structure based drug design.

171. Bioinorganic Chemistry
(3) BUTLER

Prerequisite: Chemistry 173A.

Selected topics in bioinorganic chemistry, and metallo-biochemistry. Discussions of metalloproteins and corresponding model compound investigations. Emphasis will be on reactions mechanisms and spectroscopy or properties of metal sites.

173A. Advanced Inorganic Chemistry
(3) FORD, STUCKY, WATTS

Prerequisites: Chemistry 113A-B-C. Lecture, 3 hours.

Electronic structure of atoms and molecules. Models for bonding in molecules of nontransition and transition elements. Applications of symmetry to bonding, electronic and vibrational spectroscopy. Stereochemistry of transition metal complexes and introduction to organometallics.

173B. Advanced Inorganic Chemistry
(3) FORD, STUCKY, WATTS

Prerequisite: Chemistry 173A. Lecture, 3 hours.

Structures of ordered crystalline solids, X-ray crystallography. Introduction to solid state chemistry, inorganic materials and chemical catalysis. Bioinorganic chemistry.

175. Physical-Inorganic Chemistry
(3) FORD, STROUSE, WATTS

Prerequisites: Chemistry 173A-B. Lecture, 3 hours.

Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organometallic) reactions and their mechanisms.

176. Photochemical and Photophysical Properties of Inorganic and Organometallic Compounds and Materials
(3) FORD, STUCKY, WATTS

Prerequisite: Chemistry 173A. Lecture, 3 hours.

Discussion of the mechanisms of fundamental physical and chemical events which follow absorption of light by inorganic or organometallic chromophores. Consideration of homogeneous and heterogeneous systems as well as the design and operation of photo-optical and photoelectrical devices.

181. Protein Crystallography
(3) KOHLSTAEDT, PERONA

Prerequisite: consent of instructor.

Introduction to diffraction techniques. Protein crystal growth and morphology. Data collection and reduction strategies. Approaches for solving the phase problem. Crystallographic refinement, including molecular dynamics. Interpretation of crystal structure.

184. Chemical Literature
(2) HUBER

Prerequisites: prior enrollment in 3 lower-division chemistry courses. Lecture, 2 hours.

Lectures and exercises on the literature and other information resources of use in chemistry.

195. Chemical Instrumentation
(3-5) STAFF

Prerequisite: consent of instructor. Discussion, 1 hour; laboratory, 6 to 12 hours.

With guidance from a faculty member students learn advanced laboratory techniques by independent experimental work and weekly consultations with the instructor. This course may be used to satisfy the upper-division laboratory requirement.

196. Special Courses
(1-4) STAFF

Prerequisite: consent of instructor. Tutorial, 3-12 hours.

Special courses as a means of meeting special curriculum needs.

197. Senior Thesis Project
(1-4) STAFF

Prerequisite: consent of instructor.

Must have a grade-point average in the major of 3.25 or higher.

Academic research supervised by a faculty member, and resulting in a written thesis document.

199. Independent Studies in Chemistry
(1-5) STAFF

Prerequisites: upper-division standing in the major; completion of two upper-division courses in chemistry.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Not applicable to the B.A. in Chemistry. No more than 12 units of Chemistry 199 may apply toward the B.S. in Chemistry. Tutorial, 1-5 hours.

Coursework shall consist of academic research supervised by a faculty member. This course is not intended for internship credit.

GRADUATE COURSES

203A-B. Combinatorial Methods in Chemistry and Chemical Engineering
(3-3) MCFARLAND

Prerequisite: consent of instructor.

Same course as Chemical Engineering 203A-B.

Recommended preparation: prior coursework in inorganic and organic chemistry. Lecture, 3 hours.

Foundation and methodologies of chemical, biological, and materials research and discovery using automated, high-speed synthesis and screening. Emphasis on the chemical, biochemical, physical, and mathematical fundamentals necessary for experimental design, synthesis, high-throughput screening and analysis of combinatorial libraries.

211. Chemical Kinetics
(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours

The laws and theories governing rates of chemical reactions and reaction mechanisms. Empirical treatment of reaction rates, treatment of data, gas-phase reactions, reactions in solution, catalysis, complex reactions, chain reactions. Collision theory and potential energy surfaces.

212. Chemical Dynamics
(3) BOWERS, WODTKE

Prerequisite: consent of instructor. Lecture, 3 hours.

Dynamics of molecular collisions and elementary chemical reactions, including elastic and inelastic collisions, potential energy surfaces, reactive scattering, state specific reaction cross sections, reagent state preparation and product state analysis, molecular beam and laser techniques in chemical dynamics. (Normally offered in alternate years.)

214A-B. Statistical Mechanics
(3-3) METIU

Prerequisite: consent of instructor.

Course content changes and the course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in advanced statistical mechanics. Critical phenomena and renormalization group theory. Correlation functions and response functions with applications to light, electron, neutron, and atom scattering from solids to liquids. Time dependent statistical mechanics with applications to relaxation phenomena. Stochastic methods.

215A-B. Quantum Mechanics
(3-3) KIRTMAN, METIU

Prerequisite: consent of instructor.

Course content changes each year and may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in advanced quantum mechanics. Scattering theory with applications to potential scattering, electron scattering, and chemical reactions. Quantum theory of light and its interaction with matter. Molecular spectroscopy. Electronic structure calculations.

216A-B-C. Fundamentals of Quantum Chemistry
(3-3-3) KIRTMAN

Prerequisite: consent of the chemistry graduate advisor.

A. Introduction to Quantum Mechanics-Postulatory Approach; particle in box, on ring, harmonic oscillator, linear operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory applications.

B. Molecular orbital theory and valence bond theory, Huckel theory (secúlar equn.) applications to conjugated systems, electronic spectra, and term symbols introduction to infrared, Raman and microwave spectroscopy.

C. Introduction to NMR, EPR, Group Theory; applications.

217. Statistical Thermodynamics
(3) METIU

Prerequisite: consent of the chemistry graduate advisor.

Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

218. Photochemistry and Radiation Chemistry
(3) BURATTO

Prerequisite: consent of the chemistry graduate advisor.

Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

219. Selected Topics in Physical Chemistry
(1-4) STAFF

Prerequisite: consent of instructor.

Course may be repeated with a different topic (18 units maximum). Lecture, 1 to 4 hours.

Selected topics: orbital symmetry rules for chemical reactions (Pearson); classical theory of light, radiation, and spectroscopy (Metiu); nonlinear optics and nonlinear spectroscopy (Metiu).

220. Surface Chemical Physics
(3) METIU

Prerequisite: consent of instructor. Lecture, 3 hours.

Interactions of molecules with surfaces with emphasis on energy transfer. Condensation/evaporation, dissociation, internal energy transfer. Surface bonding and surface catalysis. Includes discussion of important surface instrumentation methods.

221. Transitions Metal Catalyed Polymerization
(3) DEMING

Prerequisite: consent of instructor.

Same course as Materials 282. Lecture, 3 hours.

Examination of strategies for controlling molecular weight, chain distribution, sequence, endgroups, and stereochemistry. Discussion of the influence of these variables over structure and properties. Tacticity, control; Ziegler-Natta catalysis, living polymerizations, stereoselective and enantioselective polymerizations, secondary and tertiary structures, polymer assemblies, and biological polymerization.

222A-B-C. Fundamentals of Quantum Chemistry
(3-3-3) KIRTMAN

Prerequisites: consent of the graduate advisor;

graduate standing.

Not open for credit to students who have completed Chemistry 113A-B-C.

A. Introduction to quantum mechanics-postulatory approach; particle in box, on ring, harmonic oscillator; lineral operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory; applications.

B. Molecular orbital theory and valence bond theory (secular equ.) applications to conjugated systems, electronic spectra, and term symbols; introduction to infrared Raman, and microwave spectroscopy.

C. Introduction to NMR, EPR, Group Theory; applications.

225. Instrumental Methods in Physical Chemistry

(3) BOWERS, WODTKE

Prerequisite: consent of instructor.

Advanced undergraduates may enroll by petition to their college office. Lecture, 3 hours.

Fundamentals of basic measurements and advanced research instrumentation are taught. Emphasis is on both practical and conceptual understanding of the methods, suitable for experimental design. Signal electronics, vacuum techniques, molecular beams, lasers, and optics.

230. Modern Instrumental Techniques in Organic Chemistry

(3) STAFF

Prerequisite: graduate standing. Lecture, 3 hours.

Practical spectroscopy including infrared and ultraviolet, but with primary emphasis on nuclear magnetic resonance, electron spin resonance, and mass spectroscopy. (Not offered every year.)

231A-B-C. Advanced Organic Chemistry

(3-3-3) ANDERSON, AUE, LIPSHUTZ, LITTLE, RICKBORN, BAZAN, DEMING, PETTUS

Prerequisite: consent of the chemistry graduate advisor.

Not open for credit to students who have completed Chemistry 226A-B-C.

A. Physical organic chemistry-mechanism, stereochemistry, structure and reactivity.

B and C. Mechanism and synthesis in organic chemistry.

233. Advanced Synthetic Chemistry

(3) AUE, LIPSHUTZ, LITTLE, RICKBORN, PETTUS

Prerequisite: consent of instructor. Lecture, 3 hours.

A comprehensive discussion of modern synthetic organic methods, including the applications of addition, condensation, substitution, and rearrangement reactions. (Not offered every year.)

236. Molecular Orbital Theory

(3) AUE, LITTLE

Prerequisite: graduate standing. Lecture, 3 hours.

Applications of molecular orbital theory to organic chemistry. (Not offered every year.)

237. Advanced Physical Organic Chemistry

(3) AUE, BAZAN, DEMING, LITTLE, RICKBORN

Prerequisite: consent of instructor.

Not open for credit to students who have completed Chemistry 231. Lecture, 3 hours.

Study of the structural and environmental factors which influence the course of chemical reactions of organic compounds.

239. Selected Topics in Organic Chemistry

(1-4) ANDERSON, RICKBORN, LITTLE, AUE, LIPSHUTZ, BAZAN, DEMING, PETTUS

Prerequisite: consent of instructor.

Course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in organic chemistry. The contents of this course will vary.

242A-B-C. Chemical Aspects of Biological Systems

(3) KOHLSTAEDT, PARSONS, PERONA, PLAXCO, REICH

Prerequisite: consent of the chemistry graduate advisor.

A. Macromolecules of biological importance. A survey of the physical and chemical properties of proteins, nucleic acids, and carbohydrates. Methods of preparation, chemical synthesis, degradation, and characterization of biomolecules.

B. Chemical aspects of intermediary metabolism. The chemistry and elementary dynamic properties of enzymes; study of enzyme active sites; characterization of metabolic pathways and methods of examining cellular regulation.

C. Macromolecular biosynthesis and specialized cellular processes. A survey of nucleic acid and protein biosynthesis, characterization of lipids and membranes; function of membranes in transport, energy transduction, and cellular control; mechanisms of muscle contraction and cell motility; neurochemistry.

245. Computational Biochemistry

(3) KOHLSTAEDT, PERONA, REICH, GERIG

Prerequisites: Chemistry 113A or 112 or 142A-B-C or Chemistry 113A-B-C.

Same course as Biochemistry-Molecular Biology 245.

Introduction to molecular modeling and molecular dynamics. Discussion of practical considerations of energy minimization, solvent modeling, structure-based drug design. Practical computer graphics experience.

246. Membrane Biochemistry

(3) PARSONS, REICH

Prerequisites: Chemistry 142A-B-C.

Same course as Biochemistry-Molecular Biology 246.

Introduction to the structures and roles of lipids and their behavior, lipsomes, membrane proteins and kinetics, protein sorting, and signal transduction.

253. Advanced Analytical Techniques

(3) STROUSE

Prerequisite: open only by consent of the Chemistry Graduate Advisor.

Principles of analytical methodology, as in spectroscopy, electroanalysis and chromatography. Applications to environmental problems, forensic and clinical analysis, and industry. The laboratory will require the analysis of an environmental sample by two or more methods.

254A-B. Magnetic Resonance Techniques in Biological Systems

(3-3) GERIG

Prerequisite: consent of instructor. Lecture, 3 hours.

A discussion of the theory and practice of magnetic resonance methods currently used in studies of proteins, nucleic acids, and polysaccharides both individually and in complex structures such as membranes. NMR and EPR techniques will be included but the emphasis will be on high-resolution 1H and 13C spectroscopy. (Normally offered in alternate years.)

256A. Physical Biochemistry

(5) GERIG, KOHLSTAEDT, PARSONS, PERONA, PLAXCO, REICH

Prerequisites: one year of undergraduate courses in: biochemistry, organic chemistry, and physical chemistry.

Same course as BMB 256A. Lecture, 5 hours; discussion, 1 hour.

Isolation and structural analysis of biomolecules, hydrodynamics, spectroscopy, diffraction, scattering.

256B. Enzyme Kinetics and Mechanisms

(5) GERIG, KOHLSTAEDT, PARSONS, PERONA, PLAXCO, REICH

Prerequisites: one year of undergraduate courses in each of the following: biochemistry, organic chemistry, physical chemistry.

Same course as Biochemistry-Molecular Biology 256B. Lecture, 4-5 hours.

Enzyme kinetic and chemical mechanisms. Theory, experimental design, and data analysis. Enzyme models and non-classical enzymes.

258. Mechanisms of Organic and Enzymatic Reactions

(3) STAFF

Prerequisite: consent of instructor. Lecture, 3 hours.

Formal presentation of seminars on recent literature dealing with mechanisms of organic and enzymatic reactions accompanied by open discussion of the topics considered.

259. Selected Topics in Biological Chemistry

(1-4) STAFF

Prerequisite: consent of instructor.

Same course as Biochemistry-Molecular Biology 259. Course may be repeated with a different topic (18 units maximum). Lecture, 1 to 4 hours.

Selected topics from bio-organic, biophysical, or biological chemistry. The contents of this course will vary.

260. Research Seminar in Biochemistry-Molecular Biology

(1) BIOLOGICAL SCIENCES AND CHEMISTRY FACULTY

Prerequisite: graduate standing. Seminar, 1-2 hours.

Seminars presented by faculty of the chemistry department and the molecular biology-biochemistry section of biological sciences. Current research topics.

261. Enzyme Mechanisms

(3) PARSONS

Prerequisites: Chemistry 142A-B-C or MCDB 108A-B-C. Lecture, 3 hours.

Chemistry, structure, and function of enzymes; theory, experimental design, and data analysis. Enzyme models and non-classical enzymes.

262. Drug Design

(3) REICH

Prerequisites: Chemistry 142A-B-C or MCDB 108A-B-C.

Same course as Biochemistry and Molecular Biology 254. Lecture, 3 hours.

Rational drug design. Active site-directed and mechanism-based inhibitors. The use of computers and energy calculations in the design of drugs. Structure based drug design.

267. Transition Metal Oxides

(3) CHEETHAM

Same course as Materials 203. Lecture, 3 hours.

Introduction to transitions metal oxides, ligand field theory, structural basis of magnetism.

268A. Advanced Inorganic Chemistry

(3) BUTLER, FORD, STUCKY, WATTS

Prerequisite: consent of the chemistry graduate advisor.

Not open for credit to students who have completed Chemistry 173A, or 272A. Lecture, 3 hours.

Electronic structure of atoms and molecules. Models for bonding in molecules of nontransition and transition elements. Applications of symmetry to bonding, electronic and vibrational spectroscopy. Stereochemistry of transition metal complexes and introduction to organometallics.

268B. Advanced Inorganic Chemistry

(3) BUTLER, FORD, STUCKY, WATTS

Prerequisite: consent of the chemistry graduate advisor.

Not open for credit to students who have completed Chemistry 173B, or 272B. Lecture, 3 hours.

Structures of ordered crystalline solids, x-ray crystallography. Introduction to solid state chemistry, inorganic materials and chemical catalysis. Bioinorganic chemistry.

269. Crystallography and Structure Determination

(4) STUCKY

Prerequisite: Chemistry 273.

Topics in structure determination: structure factors, integrated intensities, data collection, the phase problem, Patterson synthesis, direct methods, structure refinement, Debye-Waller factors, thermal diffuse scattering and extinction. Rietveld analysis of powder diffraction data. Synchrotron X-rays, neutron diffraction, electron diffraction, non-crystalline materials.

270. Graduate Seminar in Inorganic/Analytical Chemistry

(2) STAFF

Prerequisite: graduate standing. Seminar, 2 hours.

Seminars on current research topics in Inorganic/Analytical Chemistry presented by faculty, visiting scholars, and postdoctoral and senior graduate students.

271. Bioinorganic Chemistry

(3) BUTLER, FORD

Prerequisites: Chemistry 173A-B. Lecture, 3 hours.

Selected topics in bioinorganic chemistry and metallobiochemistry with a major focus on recent developments. Topics will include discussions of metalloproteins and corresponding model compound investigations. Emphasis will be on reaction mechanisms and spectroscopic properties of metal sites.

272. Reaction Mechanisms in Organometallic and Inorganic Chemistry
(3) BUTLER, FORD
Prerequisites: Chemistry 173A-B. Lecture, 3 hours.
Discussion of chemical reaction mechanisms. Emphasis will be on fundamental reactions of metal compounds such as substitution, addition, elimination, and redox reactions for homogenous catalysis mechanisms and other complex systems.

273. Structural Inorganic Chemistry
(3) CHEETHAM, STUCKY
Prerequisites: Chemistry 173A-B and 175. Lecture, 3 hours.
The use of x-ray and neuron scattering to characterize solid state materials. Subjects include the crystal unit cell, space groups, structure determination and refinement. It is recommended that the student have an elementary introduction to vectors, matrices, and Fourier series.

274. Solid State Inorganic/Materials
(3) CHEETHAM, STUCKY
Prerequisites: Chemistry 173A-B.
Same course as Materials 274. Lecture, 3 hours.
An introductory course describing the synthesis, physical characterization, structure, electronic properties, and uses of solid state materials. (Normally offered in alternate years.)

275. Physical—Inorganic Chemistry
(3) FORD, WATTS, CHEETHAM
Prerequisite: consent of the chemistry graduate advisor. Lecture, 3 hours.
Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organometallic) reactions and their mechanisms.

276. Photochemical and Photophysical Properties of Inorganic and Organometallic Compounds and Materials
(3) STAFF
Prerequisites: Chemistry 173A-B. Lecture, 3 hours.
Discussion of the mechanisms of fundamental physical and chemical events which follow absorption of light by inorganic or organometallic chromophores. Consideration of homogeneous and heterogeneous systems as well as the design and operation of photo-optical and photoelectrical devices.

277. Introduction to Inorganic Materials
(3) CHEETHAM
Prerequisite: Chemistry 274.
Same course as Materials 218.
Structures of inorganic materials: close-packing, linking of simple polyhedra. Factors that control structure: ionic radii, covalency, ligand field effects, metal-metal bonding, electron/atom ratios. Structure-property relationships in e.g. spinels, garnets, perovskites, rutiles, fluorites, zeolites, B-aluminas, graphites, common inorganic glasses.

278. Synthesis in Organometallic and Inorganic Chemistry
(3) KASKA
Prerequisites: Chemistry 173A-B. Lecture, 3 hours.
The methodologies of synthetic inorganic and organometallic chemistry will be discussed. Of particular emphasis will be techniques of preparing and handling air and moisture sensitive compounds and compound purification and crystallization. (Normally offered in alternate years.)

279. Selected Topics in Inorganic Chemistry
(1-4) STAFF
Prerequisite: consent of instructor.
Course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.
This course is designed to reflect recent developments in inorganic chemistry.

281. Protein Crystallography
(3) PERONA, KOHLSTAEDT
Prerequisite: consent of instructor.
Same course as Biochemistry-Molecular Biology 281.
Introduction to diffraction techniques. Protein crystal growth and morphology. Data collection and reduction strategies. Approaches for solving the phase problem. Crystallographic refinement, including molecular dynamics. Interpretation of crystal structures.

284. Chemical Literature
(2) HUBER
Prerequisite: consent of the chemistry graduate advisor only. Lecture, 3 hours.
Lectures and exercises on the literature and other information resources of use in chemistry.

285. Synthetic Chemistry of Macromolecules
(3) BAZAN, DEMING
Prerequisite: consent of instructor.
Same course as Materials 284. Lecture, 3 hours.
The course will cover methods for the preparation of polymers. Organic chemistry synthetic reactions will be reviewed with particular emphasis on functional groups that lead to polymers.

290. Seminar in Chemistry
(2) LITTLE
Prerequisite: consent of instructor.
May be repeated for credit. Lecture, 1 hour.
Presentation of seminar required of all chemistry graduate students.

291. Special Seminar in Chemistry
(2) STAFF
Prerequisite: consent of instructor.
May be repeated for credit. Lecture, 1 hour.
Specialized seminar topics.

293. Faculty Research Seminar
(2) STAFF
Prerequisite: consent of instructor. Seminar, 2 hours.
A series of seminars by department faculty describing their active research projects.

501A-B-C. Techniques of Teaching and Laboratory Class Supervision
(2-2-2) STAFF
Prerequisite: graduate standing.
S/U grade. Discussion, 1 hour.
An initial 2-3 day workshop is followed by weekly discussion. Topics covered: laboratory organization, supervising experiments, safety, presentations, leading discussions, writing quizzes, advising, and grading. Aimed at new teaching assistants.

594. Special Topics
(1-4) STAFF
Variable hours.
Special seminar on research subjects of current interest.

595. Group Studies
(2) STAFF
Critical review of research in selected fields. Regular meetings are held in which the student presents for discussion information from the recent chemical literature.

596. Directed Reading and Research
(2-12) STAFF
Same course as Biochemistry-Molecular Biology 596CH. No more than half the units necessary for the master's degree may be taken in Chemistry 596. Tutorial, 2-8 hours.
Individual tutorial. Instructor usually the student's major professor. A written proposal for each tutorial must be approved by the department chair. Each faculty member has a unique number designation.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-3) STAFF
No unit credit allowed toward advanced degree(s). S/U grade. Variable hours.
Instructor should be the student's major professor or chair of the doctoral committee.

598. Master's Thesis Research and Preparation
(1-12) STAFF
No unit credit allowed toward advanced degree. S/U grade. Variable hours.
Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF
S/U Grade. Variable hours.
Only for research underlying the dissertation, writing the dissertation. Instructor should be the chair of the student's doctoral committee.

Related Courses in Other Departments

EEMB: 126A, 126MM, 226A, 226AS, 226MM

Chicano Studies

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Faculty

Ralph Armbruster-Sandoval, Ph.D., UC Riverside, Assistant Professor (globalization, labor, social movements, race and ethnic relations, Latin American studies)

Edwina Barvosa-Carter, Ph.D., Harvard University, Assistant Professor (contemporary social and political theory, intellectual history, Chicana/o studies)

Yolanda Broyles-González, Ph.D., Stanford University, Professor (Chicano and German studies, gender and performance, oral tradition, Native American studies, cultural studies, music)

Mario T. García, Ph.D., UC San Diego, Professor (Chicano history, race and ethnicity, southwestern history)

María Herrera-Sobek, Ph.D., UC Los Angeles, Professor, Luis Leal Endowed Chair in Chicano Studies (literature, gender, cultural studies, oral tradition)

Jonathan Xavier Inda, Ph.D., UC Berkeley, Assistant Professor (globalization, migrant and diasporic cultures, culture and the body, nations and nationalism, critical theories of violence)

Francisco A. Lomelí, Ph.D., University of New Mexico, Professor (literature)

Chela Sandoval, Ph.D., UC Santa Cruz, Associate Professor (cyber and millennial studies, third space feminism, critical media theory and production, oppositional consciousness and social movement)

The Department of Chicano Studies is an interdisciplinary undergraduate program that fosters a historical, political, social, and cultural understanding of the heterogeneous Chicano and Chicana experience. Chicano Studies builds upon the critical inquiry of traditional disciplines, as well upon a host of innovative

approaches that have surfaced over the last few decades, most notably in gender, ethnic, sexuality, border, and global studies. Chicano Studies thus actively advocates the crossing of disciplinary boundaries and encourages the creative interweaving of methods, providing a unique alternative to traditional forms of intellectual inquiry.

In the twenty-first century, the Chicano/Latino peoples of the United States and particularly of California are situated at the forefront of a new multicultural, multilingual force that is rapidly changing the face of the Americas. Given its interdisciplinary nature, the Department of Chicano Studies is uniquely positioned to comprehend the diverse knowledge, experience, and cultures resulting from these millennial transformations. The academic program integrates the study of Chicano populations in the United States with studies of history, consciousness, political institutions, social systems, and forms of cultural expression. Many Chicano Studies courses address contemporary issues that arise in response to new political, economic, and cultural realities: changing modes of identity; new understandings of gender, sexuality, and social movements; immigration and bi-national populations; and growing trends toward globalization, transnationalization, and transculturation. Courses critically engage themes and methods capable of speaking about race, culture, power, sexuality, gender, class, and social transformation.

The major in Chicano Studies is designed to provide a broad liberal arts education for the twenty-first century. The goals of the major are as follows: (1) to encourage participatory and student-centered learning so that students become agents of knowledge and change; (2) to motivate students to examine their own political, economic, social, and cultural positions; (3) to empower students to move beyond being objects of study toward being subjects in their own social realities; (4) to enable majors to become conversant in historical and structural formations of power pertaining to processes such as racism, sexism, historicity, gender, and race relations, inter-ethnic connections, and dominant social theories; (5) to prepare all students to inhabit and contribute to an increasingly diverse and transnational society which demands new modes of interaction.

The major can be used as preparation for a career in such fields as teaching and education, counseling and social services, health and human services, public service, law, and business. The major also provides excellent undergraduate preparation for students who intend to do graduate work in the field of ethnic-American studies or associated areas in the social sciences, humanities, or arts.

Undergraduate majors, incoming students, and prospective majors are invited to consult the departmental undergraduate academic advisor about all aspects of planning a program in Chicano Studies. Detailed descriptions of course offerings are available in the department office prior to the registration period, along with several guides and information sheets for majors and prospective majors.

Students with a bachelor's degree in Chicano Studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Program

Bachelor of Arts—Chicano Studies

Preparation for the major. Chicano Studies 1A-B-C; Chicano Studies 12 or Spanish 6 or equivalent.

Upper-division major. Forty-four upper-division units emphasizing seven sub-areas, selected from the following:

A. Global, Postcolonial, and Border Studies—One course (4 units). Chicano Studies 152, 171, 173, 177, 178A, 185, 189, 189B, 189C

B. Literature, Culture, and Representation—Two courses (8 units). Chicano Studies 137, 138, 139, 143, 148, 180, 181, 182, 183, 184A, 184B, 184C, 186A, 186B, 187, 188A, 188B, 188C, 190

C. Politics, History, and Community—Two courses (8 units). Chicano Studies 110, 112, 115, 130A, 130B, 131, 140, 144, 154F, 155R, 155W, 168A-B, 168E, 168F, 168P, 168PA, 168PB, 169, 170A, 170B, 172, 174, 175, 176, 179, 192, 194

D. Critical and Cultural Theory—One course (4 units). Chicano Studies 114, 149, 151, 167

E. Gender and Sexuality Studies—One course (4 units). These courses are also listed in Areas A through D but may not be applied to more than one area. Chicano Studies 148, 149, 151, 154F, 155R, 155W, 167, 184A

F. Proseminar: Chicano Studies 193—One course (4 units). The proseminar, offered once a year, must be taken in the junior or senior year.

G. Electives—Three courses (12 units). Any of the courses not used from Area A - Area D. Up to 8 units of closely related fields outside the major may be applied by petition.

Note: By petition, special topic courses listed as Chicano Studies 191AA-ZZ (up to 8 units) may be applied toward appropriate sub-areas. Students must obtain prior approval from the department and the College of Letters and Science. See the undergraduate advisor.

Chicano Studies Courses

LOWER DIVISION

1A-B-C. Introduction to Chicano/a Studies
(4-4-4) STAFF
Introduction to the historical and contemporary development of the Chicano/a community. Course is interdisciplinary in nature. Focuses by quarter on A. history, B. gender, and C. culture.

12. Introduction to Chicano Spanish
(4) LOMELÍ
Prerequisite: Spanish 5.
The course will introduce students to Chicano Spanish and help them to improve oral and written skills, distinguish between standard speech and popular variants, and to learn the Chicano Spanish lexicon.

99. Independent Studies
(1-4) STAFF
Students are limited to 5 units per quarter and 30 units total in all 9B/99/198/199/199RA courses combined.
Independent study under the guidance of a faculty member in the department. Course offers students the opportunity to undertake independent study or work in a group.

UPPER DIVISION

110. Research Methods in Chicano Studies
(4) STAFF
Prerequisites: Chicano Studies 1A-B-C.
Using Chicano Studies topics, the course will introduce students to: the epistemology of scientific inquiry (its history and contemporary movements); the strengths and weaknesses of quantitative and qualitative methodologies; and, the mechanisms of research design (transforming an idea into a research plan).

112. Methodology of the Oppressed
(4) SANDOVAL
Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C.
"Minority discourses" employ in various modes what can be defined as "the theories and methodologies of the oppressed." What are these theories and methods, and how are they encoded in literature, theory, ideology, and popular culture?

114. Cultural and Critical Theory
(4) SANDOVAL
Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C.
Introduction to the various modes, techniques, terminologies, and methodologies fundamental to Cultural Studies.

115. Psychological Issues and the Chicano Child
(4) STAFF
To give the student an understanding of the fundamentals of psychology; to introduce the fundamentals of child psychology; and to analyze and discuss pertinent psychological principles and research related to the Chicano child.

130A. Education of Chicanos: A Historical Perspective
(4) STAFF
Prerequisite: Chicano Studies 1A or 1B or upper-division standing.
This lecture course is aimed at providing an overview of the education provided for Chicanos from 1848 to the present. It provides an understanding of the origins, development, and status of public education for Chicano children in the Southwest.

130B. The Chicano Quest for Educational Equality
(4) STAFF
Prerequisite: Chicano Studies 1A or 1B or 130A or upper-division standing.
This lecture course traces the legal, administrative, and political efforts made by Chicanos to secure more and better education for their children. It also assesses its impact and influence on the public schools.

131. An Introduction to Issues in Chicano Bilingual Education
(4) STAFF
This is an introduction to bilingual education and its effect on Chicanos. Specific issues include the evolution and development of policy at the federal and state levels, theory and practice of bilingual education pertaining to Chicanos, the status and future of this program.

137. Chicano/Mexican Oral Traditions
(4) BROYLES-GONZÁLEZ, HERRERA-SOBEK
Recommended preparation: knowledge of Spanish and English.
The course will introduce students to the ancient roots of Chicano oral traditions. Contemporary forms of Chicano oral poetry, oral narrative, and drama will be examined, in addition to more ephemeral forms such as cabula, choteo, joke-telling, or dichos.

138. Barrio Popular Culture
(4) BROYLES-GONZÁLEZ
Prerequisite: upper-division standing.

The course will explore various manifestations of popular and mass culture in Chicano urban and semi-rural communities throughout the southwest. Both secular and religious cultural phenomena will be analyzed (lowriders, saints, music, etc.). Relationships to mainstream culture will be examined.

139. Native American Heritage and Chicano Cultural Renaissance
(4) BROYLES-GONZÁLEZ

Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C.

The course will explore the intense recourse to the Native American heritage during the Chicano cultural renaissance of the 1960s and 1970s. The rediscovery of the native ancestral cultures will be analyzed in poetry, prose, drama, the graphic arts.

140. The Mexican Cultural Heritage of the Chicano
(4) HERRERA-SOBEK, LEAL, LOMELÍ

Prerequisite: consent of instructor.

A panoramic view of present-day Chicano traditions analyzed from a Mexican cultural heritage perspective in order to comprehend and appreciate the uniqueness and difference of present-day Chicano culture, its achievements, and contribution to the overall American culture.

143. Chicano/a Film Studies
(4) LOMELÍ

Study of Chicano/a cinema to view film as an art form and projection of the filmmaker. Techniques, messages, and ideology stressed as instruments which propose film truth within the context of Chicano/a experience.

144. The Chicano Community
(4) ARMBRUSTER-SANDOVAL

Prerequisite: upper-division standing.

Same course as Sociology 144.

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community, social structure, and social change; acculturation and generational patterns; community leadership and change.

148. Chicano/a Art
(4) STAFF

Chicano/a artists examine the development of Chicano/a art within the historical and socio-political context of the Chicano Movement and the Chicanao/a struggle for liberation. Emphasis on analysis and interpretation of historical and socio-political context in which Chicano/a artists live.

149. Body, Culture, and Power
(4) INDA

Prerequisite: Chicano Studies 1A or 1B or 1C.

Exploration of the construction, imaging, and experience of the body in light of modern regimes of power/knowledge. Particular attention is paid to the work of Michel Foucault on disciplinary technologies, medical practices of ab/normalization, and the emergence of bio-power.

151. U.S. Third World Feminisms
(4) SANDOVAL

Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C.

This course surveys contemporary forms of feminist consciousness expressed by U.S. women of color. Can U.S. women of color be considered a political class? what relations exist between women of color across race, culture, sex, and class differences?

152. Postcolonialism
(4) ARMBRUSTER-SANDOVAL, BARROSE-CARTER, INDA, SANDOVAL

Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C.

Exploration of postcolonial theories and their effectiveness as critical tools in discussing Chicano cultural production. Focus will be on Chicano culture as it creates a counterdiscourse to dominant cultural formations. We will study film, music, visual, performance and literary arts.

154F. The Chicano Family
(4) SEGURA

Prerequisites: upper-division standing.

Same course as Sociology 154F.

This course provides an overview of historical and contemporary research on Chicano families in the United States. Changing viewpoints on the character of Chicano families and their implications with respect to policy issues are examined.

155R. Chicana Research Issues
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Sociology 155R.

This course is designed to enable students to develop and implement a research project that explores in depth one or more facets of the Chicana experience. Students will select and gather information in one area of interest such as: family, health, education, or employment.

155W. La Chicana: Mexican Women in the United States
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Sociology 155W.

Examines existing research on native-born and immigrant Mexican women in the United States with emphasis on family, education, employment, and politics. Analysis of the Chicana experience organized by considering how interplay between class, race, and gender affects access to opportunity and equality.

167. Chicana Feminisms
(4) BARVOSA-CARTER, HERRERA-SOBEK, SANDOVAL

Different feminisms have contributed significantly to contemporary political thought. In this course, students survey the historical development and primary issues of Chicana Feminism, including its practices of political intervention, major writings, and comparisons to other influential feminisms.

168A-B. History of the Chicano
(4-4) GARCÍA, VARGAS

Prerequisite: any quarter of History 17A-B-C or any quarter of Chicano Studies 1A-B-C or upper-division standing.

Same course as History 168A-B.

The history of the Chicanos, 1821 to the present; traces the sociocultural lifeline of the Mexicans who have lived north of Mexico.

168E. History of the Chicano Movement
(4) GARCÍA

Prerequisite: any quarter of Chicano Studies 1A-B-C, or History 10 or 168B, or Chicano Studies 10 or 168B or upper-division standing.

Same course as History 168E.

An examination of the Chicano movement in the United States from the mid-1960s to the mid-1970s. Topics will include the student movement, the farmworker movement, the Plan de Aztlan, the Raza Unida Party, Chicana feminists, the anti-war movement, and Chicano studies.

168F. Racism in American History
(4) GARCÍA, ARMBRUSTER-SANDOVAL

Prerequisite: any quarter of History 17A-B-C or any lower-division course in Asian American studies, Black studies, Chicano studies or upper-division standing.

Same course as History 168F.

This course will examine racism as a major ideological force in defining American society from the colonial era to the 1980s. Major focus will be in the changing nature of racism as ideology as well as the relationship of racism to specific minority groups such as Afro-American, Native American, Chicanos, and Asian-American.

168P. Proseminar in Chicano History
(4) GARCÍA, VARGAS

Prerequisite: History 168A or 168B, or Chicano Studies 168A or 168B; and consent of instructor.

Same course as History 168P.

Studies in selected aspects of Chicano history with an emphasis on social and economic history.

168PA. Proseminar in Chicano History, Colonial to 1900
(4) VARGAS

Prerequisite: History 168A or 168B, or Chicano Studies 168A or 168B.

Same course as History 168PA.

Study of Chicanos in the context of their everyday lives through historical texts from the Colonial period to 1900. Exploration of culture, race, gender, and ethnicity. Provides new ways to investigate the role of Chicanos in American history.

168PB. Proseminar in Chicano History, 1900 to the Present
(4) VARGAS

Prerequisite: History 168B, or Chicano Studies 168B.

Same course as History 168PB.

Study of Chicanos in the context of their everyday lives through historical texts from 1900 to the present. Exploration of culture, race, gender, and ethnicity. Provides new ways to investigate the role of Chicanos in twentieth-century American history.

169. Comparative Local History
(4) STAFF

The course analyzes local and regional history of the Chicanos. Theories and methodologies of social, urban, and oral history will be examined. Public history programs for Chicano communities will be discussed. Students will develop a research prospectus for their research projects.

170A. Chicano Political Organizing: Proseminar in Theory and History
(4) ARMBRUSTER-SANDOVAL, BARVOSA-CARTER

Prerequisite: upper-division standing.

An in-depth examination of the theory and practice of various forms of political organizing. Case studies focus on Chicana/o political organizing in the postwar period with attention to grassroots community organizations, electoral politics and cultural production.

170B. Chicano Political Organizing: Conference Course and Practicum
(4) ARMBRUSTER-SANDOVAL, BARVOSA-CARTER

Prerequisite: Chicano Studies 170A; upper-division standing.

Students develop and conduct a field research project on local Chicano/a political organization and formulate their research into scholarly presentation for discussion at a bi-weekly conference meeting attended by students, faculty, and other guest speakers.

171. The Brown/Black Metropolis: Race, Class, and Resistance of the City
(4) ARMBRUSTER-SANDOVAL

Prerequisite: upper-division standing.

Traces the transition of Browns/Blacks from a rural to urban population and examines trends in family size, language usage, segregation and social inequality. Issues of urban decay and community conflict are also examined.

172. Legal Issues in the Chicano Community
(4) STAFF

Survey of recent state and federal laws and court decisions affecting the Chicano community. Special consideration will be given to landmark cases and decisions. Analysis will be made of opposing views on each case in a historical context.

173. Immigrant Labor Organizing
(4) ARMBRUSTER-SANDOVAL

Prerequisite: Chicano Studies 1A or 1B or 1C.

Status of growing immigrant population in the counties of Ventura, Santa Barbara, and San Luis Obispo and linkages to agricultural and services unions.

174. Chicano Politics
(4) BARVOSA-CARTER

Prerequisite: upper-division standing.

Same course as Political Science 174.

Political life in the barrio, political behavior of the Chicano community, and representation of Chicanos by elected officials and interest groups.

175. Comparative Social Movements
(4) ARMBRUSTER-SANDOVAL, BARVOSA-CARTER

Examination of major ethnic political and social movements of twentieth century America. Topics include: constructions of ethnic communities—music, culture, collective identity; influence of leadership, community networks, immigration. Class will specifically examine Chicano/a movements.

176. Theories of Social Change and Chicano Political Life
(4) BARVOSA-CARTER, ARMBRUSTER-SANDOVAL

Prerequisite: upper-division standing.

Introduction to classical and contemporary theories of social and political change. Students apply these theoretical frameworks toward understanding specific cases of social and political transformation and continuity which have affected Chicanos/as during the twentieth century.

177. Globalization and Transnational Social Movements
(4) ARMBRUSTER-SANDOVAL

Prerequisite: Chicano Studies 1A or 1B or 1C.

Analysis of the globalization of the world economy and the social and economic consequences of this process. Examination of the transnational social movements that emerged in response to globalization. Emphasis on Mexico and Central America and role of Chicanos in these movements.

178A. Global Migrants/Traveling Cultures
(4) INDA

Prerequisite: Chicano Studies 1A or 1B or 1C.

The migration of people and cultures across national boundaries in the current age of globalization. Focus on Mexican migration to the US and third world migration to Europe.

179. Democracy and Diversity
(4) BARVOSA-CARTER

Prerequisite: Chicano Studies 1A or 1B or 1C.

Introduction to the ancient and modern models of democracy which underpin contemporary democratic life. Special attention given to recent formulations of our democratic models and how these new approaches relate to Chicano/a political concerns and practices.

180. Survey of Chicano Literature
(4) LOMELÍ, HERRERA-SOBEK

Same course as Spanish 135.

This course encompasses a general overview of all genres (poetry, novel, theatre, short story, and essay) of Chicano literature. A people's socio-historical experiences are examined to understand ethnicity, creativity, and world view.

181. The Chicano Novel
(4) LOMELÍ, HERRERA-SOBEK

Same course as Spanish 179.

Reading, analysis, and critique of the contemporary Chicano novel as it pertains to the Chicano experience.

182. Contemporary Chicano/a Authors
(4) LEAL, HERRERA-SOBEK, LOMELÍ

Prerequisite: Chicano Studies 180 or 181.

Detailed reading and critical examination of a limited number of contemporary Chicano/a authors. A more intense study of their literary works than that provided in introductory courses.

183. Border Narrative
(4) LEAL, HERRERA-SOBEK, LOMELÍ

Prerequisite: upper-division standing.

Reading and analysis of US/Mexico border narratives (novels, essays, short stories, autobiographies) focusing on the problems associated with relations between countries.

184A. Chicana Writers
(4) HERRERA-SOBEK

Prerequisite: Chicano Studies 1A or 1B or 1C.

Examination of literary works by Chicana writers. Feminist theories as well as other contemporary critical theories are applied to the analysis of prose, poetry and dramatic words written by such authors as Sandra Cisneros, Ana Castillo, Helen Viramontes, and others.

184B. Colonial Literature of the Southwest
(4) LOMELÍ

Prerequisite: Chicano Studies 1A or 1B or 1C.

Examination of the Hispanic/Chicano literary heritage of the Southwest. Postcolonial theories are applied to the analysis of the colonial period (1530-1821) texts. Readings include prose, epic poetry, colonial theater, memoriales by representative authors.

184C. Mexican/Chicano Corrido
(4) HERRERA-SOBEK

Prerequisite: Chicano Studies 1A or 1B or 1C.

Recommended preparation: knowledge of Spanish.

Introduction to the Mexican/Chicano ballad (corrido). Traces historical trajectory of the corrido, posits theories with respect to its development. Analysis of political, social and historical issues using contemporary critical theories.

185. De-colonizing CyberCinema
(4) SANDOVAL

Prerequisite: upper-division standing.

CyberCinema is one of the most recent and innovative technologies for representing reality. What are its aesthetic forms, and how do they work to decolonize the imagination under postcolonial conditions? Can we identify a specific "Chicana/o" criticism or aesthetics?

186A. Chicano and Mexican Music
(4) STAFF

Traditional music from pre-Hispanic to contemporary; regional styles and instruments, indigenous and urban popular styles; social movement from resistance against Spain, Independence, "La Reforma," the Mexican Revolution, "Cancion Nueva," the Chicano Movement and the contemporary Zapatistas.

186B. Music/Dance of the Chicanos
(4) STAFF

A historical perspective of Mexican and Chicano music and dance with emphasis on the indigenous cultures and other contributing cultural elements which combine to form traditional and contemporary Chicano music and dance.

187. Introduction to Chicano Theater and Performance
(4) BROYLES-GONZÁLEZ

Prerequisite: upper-division standing.

A survey of the major Chicano theater and performance forms ranging from the traditional to the avant-garde contemporary. The diverse forms of performance will be studied as art forms and with regard to their respective social functions within Chicano communities.

188A. Chicano Theater: Origins to 1970
(4) BROYLES, HERRERA-SOBEK

Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C or any lower-division drama course such as Dramatic Art 60 or 60S.

Survey of the origins and development of borderlands theater, from native ritual and Indian-Hispano antecedents to today's Chicano forms. The genesis of Chicano theater will also be studied in relationship to Chicano culture and history.

188B. Contemporary Chicano Theatre
(4) BROYLES-GONZALEZ

Prerequisite: upper-division standing or Chicano Studies 1A or 1B or 1C or 188A or a lower-division drama course such as Dramatic Art 60 or 60S.

An analysis of contemporary Chicano forms of theatrical expression, ranging from barrio performances to mainstream commercial productions. The creation and presentation of Chicano dramatic forms will be analyzed in relationship to economic and historical realities affecting them.

188C. Chicano Theater Workshop
(4) STAFF

Prerequisites: Chicano Studies 188A or 188B.

Recommended preparation: knowledge of Spanish and English.

Reading and analysis of contemporary bilingual Chicano plays, in conjunction with acting and technical training. A dramatic piece will be rehearsed and performed.

189. Immigration and the U.S. Border
(4) ARMBRUSTER-SANDOVAL, INDA

Prerequisite: upper-division standing.

An analysis of the socioeconomic and political factors which have determined and continue to form the basis for the development of United States immigration policies and practices toward Mexico and the U.S-Mexican border.

189B. Postborder Culture: The Migrant World
(4) STAFF

Prerequisite: Chicano Studies 1A or 1B or 1C.

Exploration of "postborder" culture in the context of Mexican migration to the U.S. Historical background includes the formation of traditional Chicano cultural paradigms with an examination of popular forms.

189C. Cultures of Globalization
(4) INDA, SANDOVAL

Prerequisite: Chicano Studies 1A or 1B or 1C.

Examination of ethnographic and other efforts to come to terms with the increasingly hybrid, mobile, and interconnected world in which we live. Topics include: deterritorialized nations, borders and diasporas, exotic destinations, mass culture, and cultural imperialism.

190. Introduction to Chicano Poetry and Short Story
(4) LOMELÍ, HERRERA-SOBEK

Reading and appreciation of Chicano poetry and poets. Analysis and critique of the Chicano short story with discussions on the realities and values presented on the Chicano experience and universe by the author.

191AA-ZZ. Special Topics in Chicano Studies
(4) STAFF

Course may be taken up to three times (12 units) providing the letter designations are different.

Designed to allow courses of varying topics in areas of expertise of visiting professors to broaden opportunities for students. Examples might be: immigration, Native American, Mexican, or Latin American influences on the Chicano, legal issues, the migrants.

192. Field Research
(4) STAFF

Prerequisites: upper-division standing; consent of instructor.

May be repeated for credit to a maximum of 8 units.

Internship in contemporary urban problems and decision-making processes as they affect the Chicano. Internship based on directed research through observation, participation, and relevant readings. Student individually assigned, instructed and supervised in fieldwork involving practical experience in decision-making unit of local governmental social service, or of community liaison agencies.

193. Undergraduate Seminar
(4) STAFF

Prerequisites: two prior courses in Chicano Studies; consent of instructor; and upper-division standing.

To be offered intermittently.

Special topics in Chicano Studies.

194. History of Chicano and Chicana Workers
(4) VARGAS

Prerequisite: History 168A or 168B or Chicano Studies 168A or 168B.

Same course as History 168L.

The history of Chicano and Chicana workers from the late nineteenth century to the contemporary period. Focus on worker responses to the changing structures of economic, social, and political relations determined by the evolution of American capitalism.

198. Readings in Chicano Studies
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Chicano Studies.

Must have have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Readings in Chicano studies under the guidance of a faculty member in the department. Students must prepare a short plan of study and have it approved by the sponsoring faculty member.

199. Independent Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Chicano Studies.

Must have have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

199RA. Independent Research in Chicano Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Chicano Studies; consent of instructor and department.

Must have have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

201. Introduction to Chicano Graduate Studies
(4) STAFF
Prerequisite: graduate standing.

Introduction to the interdisciplinary nature of Chicano studies at the graduate level. Emphasis will be placed on theories of postcoloniality and third-world feminism. Guest lecturers will play a significant role in the planning and teaching of the course.

596. Directed Reading and Research
(2-6) STAFF
Prerequisite: graduate standing and consent of instructor.

Independent research involving advanced study on a particular Chicano studies topic. A written proposal must be approved by the department chair. Number of units depends on nature of the proposal.

Classics

Department of Classics,
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Humanities and Social Sciences 4080;
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E-mail: gd-classics@humanitas.ucsb.edu
Web site: www.classics.ucsb.edu

Department Chair: Robert Renehan

Faculty

Apostolos N. Athanassakis, Ph.D., University of Pennsylvania, Professor (Greek poetry, classical linguistics)

Francis M. Dunn, Ph.D., Yale University, Associate Professor (Greek drama, Latin poetry)

Frances V. Hickson-Hahn, Ph.D., University of North Carolina, Associate Professor (Latin literature, Roman religion)

Borimir Jordan, Ph.D., UC Berkeley, Professor (philology, epigraphy, history, religion)

Sara Lindheim, Ph.D., Brown University, Assistant Professor (Latin poetry, critical theory)

Robert Morstein-Marx, Ph.D., UC Berkeley, Associate Professor (Roman history, Roman oratory)

Robert Renehan, Ph.D., Harvard University, Professor (Greek and Latin literature, textual criticism, Greek philosophy and medicine)

Jo-Ann Shelton, Ph.D., UC Berkeley, Professor (Greek and Latin literature, Roman drama, Roman society)

Affiliated Faculty

Harold Drake, Ph.D. (History)

Rainer Mack, Ph.D. (History of Art and Architecture)

Christine Thomas, Ph.D. (Religious Studies)

Voula Tsouna, Ph.D. (Philosophy)

Fikret K. Yegül, Ph.D. (History of Art and Architecture)

Emeriti Faculty

Alva W. Bennett, Ph.D., UC Berkeley, Professor Emeritus (Latin literature, ancient comedy)

Howard W. Clarke, Ph.D., Harvard University, Professor Emeritus (Homer, comparative literature)

David C. Young, Ph.D., University of Iowa, Professor Emeritus (Greek literature, Pindar, ancient athletes)

The field of classics encompasses all aspects of Graeco-Roman culture. The heart of classical studies is the collection of literary, historical, philosophical, and scientific writings from Homeric to Byzantine times. The reconstruction and interpretation of these writings is the primary responsibility of the teacher of classics, who is frequently a specialist in some particular field such as drama, philosophy, epigraphy, papyrology, mythology, or contemporary critical theory. All of these studies are interrelated, and classicists pursuing them are working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

To best serve the interests of as many students as possible, the department offers a major with three distinct emphases (see below). It cannot be emphasized enough that the field of classics is not a narrow discipline intended for specialists only. The Greek and Roman worlds were themselves the products of cross-cultural exchange and ferment; they constituted the first widespread multicultural societies in the West and as such are of special relevance to our own multicultural society today. A major in classics can serve as a superb preparation for virtually any field of professional endeavor. The fact that classics majors are able to take many courses with small enrollments taught by senior faculty makes it especially attractive to serious students.

The department provides advising to undergraduate and graduate students. Course descriptions are prepared and distributed before the start of each quarter, and a brochure is available describing the undergraduate programs.

The Education Abroad Program offers opportunities for study in several countries with strong traditions in the teaching of the classics. England is one of these. Students who elect to go to France, Germany, Italy, or Spain also have an ideal opportunity to learn one of the languages that greatly enhance research in our field. We expect Greece to join EAP. The legacy of the classical past in both Greece and Italy is at the very center of our discipline. Study abroad under EAP is automatically accredited by UCSB. However, the authority to approve study abroad courses for a student's major or minor rests with the Department of Classics.

Prizes and Awards

The Keith Aldrich Memorial Awards are given each year by the department to an undergraduate major in classics and to a graduate student in classics, in recognition of outstanding academic achievement. The Dumas Award is given for prize essays on a mythological topic selected from essays written in Classics 40.

Undergraduate Honors

The Department of Classics at UCSB allows and encourages qualified students to pursue undergraduate honors in classics. Students admitted to the honors program in classics will write an honors thesis during their senior year, supervised by a member of the faculty. Successful completion of the program will be recognized by the award of Distinction in the Major at graduation. Candidates for the honors program in classics should petition the department chair at the end of their junior year; candidates must be in residence at UCSB for one year (three quarters) as classics majors, must have maintained a grade-point average of 3.6 in the major, and must submit a letter of reference from a member of the faculty. In the first quarter of their senior year, honors students will work with faculty members to develop a suitable topic; in each of the remaining quarters, they will enroll in Classics 199RA, Independent Research, to research and write the honors thesis in consultation with the thesis advisor.

Undergraduate Program

The undergraduate program in classics offers a challenging and rewarding course of study in the unified field of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in classics or related fields and the student primarily interested in an undergraduate liberal arts major. Students choose an emphasis in one of three areas: (1) language and literature, (2) civilization, or (3) archaeology.

Note: In the first quarter of their junior year, all majors must make an appointment with the undergraduate advisor to review their progress towards meeting the requirements of the major.

Bachelor of Arts—Classics—Classical Language and Literature Emphasis

The language and literature emphasis focuses on examining the Graeco-Roman world through an exploration of ancient texts in their original languages. Like classics as a field, this emphasis is strongly interdisciplinary. Reading in Greek and/or Latin texts offer students a sampling of poetry, drama, history, philosophy, oratory, etc.

Students who wish to pursue graduate studies in classics must take the language and literature emphasis, but this emphasis also serves well students with interdisciplinary interests who seek a challenging liberal arts

major and who enjoy small classes in which they receive significant personal attention.

Preparation for the major. Greek 1, 2, 3, 100, 101 or Latin 1, 2, 3, 100, 101 (or equivalent); Classics 37, 38, 40; History 4A; Writing 109HU.

Students completing courses in a second classical (Greek or Latin) language may substitute up to 12 units of such work for Classics 37, 38, and 40.

Upper-division major. Thirty-six upper-division units are required, distributed as follows: (a) 28 upper-division units selected from any upper-division Greek or Latin course not used in preparation for the major. Up to 12 units of the 28 may be from upper-division classics courses. (b) One course chosen from History 111A, 111B, 113A, or 113B. (c) Classics 185AA-ZZ (or Classics 199RA for honors).

Bachelor of Arts—Classics—Classical Civilization Emphasis

The classical civilization emphasis allows students to explore a broad range of subjects—literature, history, philosophy, art history, religion, social history—through courses about the ancient world with readings in English translation.

This emphasis is ideal for students with interdisciplinary interests seeking an undergraduate degree with a strong liberal arts major.

Preparation for the major. Greek, 1, 2, 3, 100, 101 or Latin 1, 2, 3, 100, 101 (or equivalent); Classics 37, 38, 40; Art History 6A; History 4A; Philosophy 20A or 25; Writing 109HU.

Students completing courses in a second classical language (Greek or Latin) may substitute up to 12 units of such work for Classics 37, 38, and 40.

Upper-division major. Thirty-six upper-division units are required, distributed as follows:

A. Classics 100A-B
B. two courses chosen from Classics 102, 109, 110, 120, 125, 130, or any upper-division Greek or Latin course not used in preparation for the major
C. four courses chosen from the following three groups with at least one course from each:
i. Classics 125 (if not used to satisfy section B above); History 111A-B-P, 112A, 112F, 113A-B-P; Political Science 187
ii. Classics 101, 108; Philosophy 106, 140, 151, 152, 153, 156, 195; Religious Studies 116A-B-C, 128A-B-C, 131B
iii. Classics 170A-B; Art History 101A-B-C, 101E, 102, 103A-B-C, 104, 184A, 186A-B
D. Classics 185AA-ZZ (or Classics 199RA for honors).

Bachelor of Arts—Classics—Classical Archaeology Emphasis

The classical archaeology emphasis brings together classical art history, classical archaeology, anthropology, and ancient history into a coherent program of study.

This emphasis is for students with an interest in archaeology looking for a strong, liberal arts major, or for students planning to pursue graduate studies in classical archaeology.

Preparation for the major. Greek 1, 2, 3, 100, 101 or Latin 1, 2, 3, 100, 101 (or the equivalent); Classics 37, 38, 40; Anthropology 3; Art History 6A, History 4A; Writing 109HU.

Students completing courses in a second classical language (Greek or Latin) may substitute up to 12 units of such work for Classics 37, 38, and 40.

Upper-division major. Thirty-six upper-division units are required, distributed as follows: (a) Anthropology 100, 181; Classics 170A-B. (b) Two courses from Classics 100A-B, 101, 102, 108, 109, 110, 125, 130, plus any upper-division Greek or Latin course not used in preparation for the major. (c) Two courses from Classics 125 (if not used above), History 111A-B-P, 112A, 112F, 113A-B-P, Art History 101A-B-C, 101E, 102, 103A-B-C, 104, 184A, 186A-B. (d) Classics 185AA-ZZ (or Classics 199RA for honors).

Minor—Classics

Students majoring in other fields who have an interest in classics may still choose to pursue an intensive study of the classical languages and culture.

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in classics and those offered by other departments and applied to the minor.

Preparation for the minor. Latin 1, 2, 3 or Greek 1, 2, 3 (12 units).

Upper-division minor. Twenty upper-division units in Classics, Greek, or Latin.

Note: Substitutions and waivers are subject to approval by the department chair/undergraduate advisor of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

In addition to the regular M.A. and Ph.D. degrees, the department also offers optional emphases in ancient history and in literature and theory. The M.A. and Ph.D. in classics with emphasis in ancient history involve significant coursework in the Department of History. The emphasis is designed for those students who wish their training to emphasize ancient history without sacrificing the classical languages.

The M.A. and Ph.D. in classics with emphasis in literature and theory are designed for students who wish to combine solid training in the classical languages with broader study in literature and theory. Students in this program will take graduate courses in literary theory, gender studies, cultural theory, or other approved areas in cognate disciplines on campus.

Admission

In addition to fulfilling the departmental admission requirements stated below, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Applicants for admission to the M.A. program in classics should have an undergraduate major or equivalent in Greek, Latin, or classics. Other students may be admitted if they demonstrate proficiency in the languages, but they will be required to make up any deficiencies in their undergraduate training in addition to completing the regular coursework for the M.A. degree.

Because a primary function of the M.A. program in classics is designed to prepare students for the Ph.D., applicants are encouraged to apply to the M.A./Ph.D. degree program. However, continuation into the Ph.D. following completion of the M.A. is at the discretion of the faculty and is dependent upon proof of the student's ability to do research at the Ph.D. level. Upon completing their M.A. in classics at UCSB, students wishing to continue into the Ph.D. program must submit one research paper and two letters of recommendation from ladder faculty in the Department of Classics. One of the ladder faculty must be willing to supervise the applicant's Ph.D. work.

A candidate for admission to the Ph.D. must present an M.A. in classics from UC Santa Barbara or the equivalent from another institution. Students applying for admission to the Ph.D. program who have received their M.A. elsewhere (or who are reapplying after having completed the M.A. in classics at UCSB) follow the M.A./Ph.D. admission program procedures. Admission is dependent upon proof of the applicant's ability to do research at the Ph.D. level.

The requirements for admission to the M.A. and/or Ph.D. in classics with an emphasis in ancient history are the same as those spelled out above.

The requirements for admission to the M.A. and/or Ph.D. in classics with an emphasis in literature and theory are the same as those listed above for the regular degrees in classics. It is generally expected that students will enter with one upper division undergraduate class in Greek or Roman history, and one introductory course in literary, cultural, or gender theory. Students who are admitted without the requisite undergraduate preparation are expected to take equivalent courses as soon as possible after entering the M.A. program.

Master of Arts—Classics

Degree Requirements

The M.A. in Classics is granted under the comprehensive examination plan. Classics 201 (Proseminar) and Classics 211, 212, 213 (History of Greek and Latin Literature) are required of all M.A. candidates and must be completed with the grade of B (or S if choosing the S/U grading option) or better in each course by all M.A. candidates. Thirty-six units are required, 24 (12 Greek, 12 Latin) of which must be in graduate courses within the department; the remaining units may come from upper-division courses in the department or from approved courses in other departments if they are relevant to the student's program.

In addition, candidates must meet the following requirements: (1) reading knowledge of either German, French, or Italian (by examination); (2) Greek and Latin sight translations (by examination); (3) Greek or Latin prose composition (by course credit); (4) two courses in Greek and Roman history; (5)

four term/research papers. Full details concerning the M.A. requirements are available upon request.

Degree requirements—Ancient History Emphasis

The degree requirements for the M.A. in classics with an emphasis in ancient history differ from those listed above for the regular M.A. in classics in the following respects: (1) Greek or Latin prose composition is not required; (2) candidates must take at least four graduate courses in Greek or Latin each year that they are in the program; (3) Greek and Latin translation examinations will be based on a reading list appropriate to the emphasis; (4) required coursework in ancient history is increased from two courses to four graduate courses (History 201E in Greek History, History 201E in Roman History, and History 211A+B or History 213A+B); (5) candidates must pass an examination in Greek and Roman history. Full details concerning the requirements for the M.A. in classics with an emphasis in ancient history are available upon request from the department.

Degree requirements—Literature and Theory Emphasis

The degree requirements for the M.A. in classics with an emphasis in literature and theory differ from those listed above for the regular M.A. in classics in these respects: (1) Greek or Latin prose composition is not required; (2) candidates must attend three additional meetings of the proseminar designed to introduce students to specifically classical theory-based scholarship; (3) Greek and Latin translation examinations will be based on a modified reading list; (4) required coursework will include two theory courses and one topics course, and candidates will be required to write two seminar papers demonstrating an application of theory—one in a classics course and one course from a department outside the Department of Classics. Full details concerning the requirements for the M.A. in classics with an emphasis in literature and theory are available from the department.

Doctor of Philosophy—Classics

Degree Requirements

In addition to completing the core courses specified above for the M.A. (Classics 201, 211, 212, and 213), candidates for the Ph.D. must complete Greek 240A-B and Latin 210A-B (Greek and Latin Prose Composition) with the grade of B or better in each course.

In addition, students must take at least two courses in interdisciplinary subjects and at least three seminars. Students must have satisfied the UCSB Department of Classics M.A. history requirement or its equivalent. (Please see M.A. degree requirement number four, above.)

The following examinations are required before the student will be advanced to candidacy: Greek or Roman history, Latin literature, Greek literature, special topic or ancillary discipline, Greek sight examination, Latin sight examination, and second foreign language (German, if student has not already passed a German examination).

The oral qualifying examination is taken after all written examinations have been passed. Upon successful completion of the examination, the student will be advanced to candidacy and will proceed with the dissertation. A defense of the dissertation is required. Full details concerning the Ph.D. requirements are available upon request.

Degree Requirements—Ancient History Emphasis

Candidates for the Ph.D. must satisfy the requirements for the M.A. emphasis in classics with an emphasis in ancient history if they have not already done so. A minimum of 36 further graduate units in classics, history (Greek or Roman), or related subjects in art history, religious studies, or philosophy, are required, including the following: (1) at least four graduate courses in Greek or Latin, of which at least two seminars in Greek or Latin authors must be taken, and (2) History 211A-B or 213A-B.

The following examinations are required before the student may advance to candidacy: translation examinations in Greek and in Latin, based on reading lists appropriate to the nature of the emphasis; Greek history; Roman history; ancient historiography or Greek or Latin literature or Greek or Roman archaeology; second foreign language (German, if student has not already passed a German examination). The nature of the oral qualifying examination is the same as for the regular Ph.D. in classics. Full details concerning the requirements for the Ph.D. in classics with an emphasis in ancient history are available upon request.

Degree requirements—Literature and Theory Emphasis

Candidates must satisfy the requirements for the M.A. in classics with an emphasis in literature and theory if they have not already done so. A minimum of 36 further graduate units in classics or related interdisciplinary courses are required, including the following: (1) three seminars with papers in classics courses, one of which must demonstrate an application of theory; (2) two theory courses; (3) a sequence of prose composition in Greek or Latin.

The following examinations are required before the student may advance to candidacy: translation examinations in Greek and Latin based on modified reading lists; special author examination in classics; special topic examination in classics; special topic examination in theory; a second modern foreign language examination (German, if student has not already passed a German examination); an oral qualifying examination with emphasis in literature. Full details concerning the requirements for the Ph.D. in classics with an emphasis in literature and theory are available from the department.

Classics Courses

Yearly schedule varies. Not all courses are offered each quarter. Courses taught in English.

LOWER DIVISION

36. Ancient Epic
(4) STAFF
A study in translation of the *Iliad*, *Odyssey*, *Aeneid*, and other ancient epics, and of the place of these epics in Greek and Roman society.

37. Greek Literature in Translation
(4) STAFF
Reading and lecture survey of the principal Greek writers.

38. Latin Literature in Translation
(4) STAFF
Reading and lecture survey of the principal Roman writers.

39. Women in Classical Literature
(4) STAFF
Study of the portrayal of women in selected Greek and Latin authors from the seventh century B.C. to the second century A.D. and this portrayal's relationship to the literary, historical, and social backgrounds of the works concerned.

40. Greek Mythology
(4) STAFF
Introduction to the principle myths of ancient Greece and the ways in which these myths have been understood. Format and readings vary. (F,W,S)

40H. Greek Mythology-Honors
(1) STAFF
Prerequisites: concurrent enrollment in Classics 40 and consent of instructor.
A discussion section led by the professor is available to students in the Honors Program. Students will receive one unit of credit for the honors seminar (40H) in addition to four units for Classics 40.

99. Introduction to Research
(1-3) STAFF
Prerequisites: consent of instructor and department chair.
May be repeated to a maximum of 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Directed study, oriented toward research, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research project or group.

UPPER DIVISION

Prerequisites for all upper-division classics courses are: upper-division standing, one prior course in classics.

100A. Greek Civilization
(4) STAFF
Introduction to the various aspects of Greek civilization such as art, education, daily life, festivals, law, religion, science, and sports. (W,S)

100B. Roman Civilization
(4) STAFF
Introduction to the various aspects of Roman civilization such as art, education, daily life, festivals, law, religion, science, and sports. Readings in primary sources in translation. (W,S)

101. The Greek Intellectual Experience: From Poetry to Philosophy
(4) STAFF
A survey of the major Greek beliefs about such concepts as the nature of man — body, soul, afterlife, gods and men, man in the cosmos— from Homer to Plato. Readings (in translation) of poetic, philosophical, and medical texts.

102. Greek Tragedy in Translation
(4) STAFF
Plays by Aeschylus, Sophocles, and Euripides in English translation. Various aspects of Greek tragedy discussed: origins, historical development, costumes, staging, performance. Primary emphasis placed on the plays as literature: plot, characters, language, etc. Role of tragedy in Greek culture.

108. Pagan Religion and Cult in Ancient Rome
(4) HAHN

A study of private and public religion in the Roman Republic, including beliefs, rituals, and structures; also, its relationship to foreign religions. Ancient sources, literary and nonliterary (in translation), will be studied.

109. Viewing the Barbarian: Representations of Foreign Peoples in Greek Literature
(4) DUNN

Study of representations of "barbarians" in Greek literature, with special interest in their cultural and historical contexts, and in the construction of Athenian ideology. Readings from Homer, Herodotus, tragedy and comedy, with essays by Said, Bernal, Hall and others.

110. From Homer to Harlequin: Masculine, Feminine and the Romance
(4) LINDHEIM

The romance, from Homer's *Odyssey* to the contemporary romance novel, creates images of masculinity and femininity. This course considers these gender representations and questions whether they vary among ancient novels, and between the romances of antiquity and those of today.

120. Greek and Latin Lyric Poetry
(4) STAFF

Development, forms, and interpretation of ancient lyric poetry; such authors as Sappho, Pindar, Catullus, and Propertius in English translation.

125. Greek and Roman Historians in Translation
(4) STAFF

Development of history as a genre; such authors as Herodotus, Thucydides, Livy, and Tacitus in English translation.

130. Comedy and Satire in Translation
(4) STAFF

The comic playwrights, such as Aristophanes and Plautus, and satirists, such as Lucian and Juvenal, in English translation.

170A. Greek Archaeology
(4) STAFF

Monuments of the Archaic and Classical Periods in the Greek world (including south Italy and north Africa).

170B. Roman Archaeology
(4) STAFF

A study of the history, buildings, and people of Pompeii, a city buried by the eruption of Mt. Vesuvius.

185AA-ZZ. Undergraduate Seminar
(4) STAFF

Prerequisites: upper-division standing and consent of instructor.

Priority given to Classics majors, Classics minors, and students in the Honors Program. May be repeated for credit to a maximum of 12 units provided letter designations are different.

Study and research of special topics in classical literature, civilization, and culture. Topics may include: Rome: the ancient city, food in antiquity, the Roman family, religious thought and practice in Rome, culture and crisis in Athens, culture and crisis in Rome, etc. (Usually taught every other year.)

198. Special Readings
(1-4) STAFF

Prerequisites: consent of instructor and department; upper-division standing; completion of two upper-division courses in classics.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Total credit for this course is limited to 6 units.

Individual or small group reading and study in subjects not included in the regular curriculum.

199. Independent Studies in Greek and Latin
(1-5) STAFF

Prerequisites: consent of instructor and department; upper-division standing; completion of two upper-division courses in classics.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent study in areas in which both Greek and Latin are necessary.

199RA. Independent Research Assistant
(1-5) STAFF

Prerequisites: consent of instructor and department; upper-division standing; completion of two upper-division courses in classics.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

To cooperate on an active basis with a professor on a research project.

GRADUATE COURSES

Graduate standing is prerequisite to all graduate courses.

201. Proseminar
(2) STAFF

Bibliography, methodology, and history of classical scholarship.

202. Comparative Greek and Latin Morphology and Syntax
(4) STAFF

Introduction to classical linguistics; history of Greek and Latin in their Indo-European context (including Mycenaean Greek).

211-212-213. History of Greek and Latin Literature
(2-2-2) STAFF

Survey of development of poetry and prose; major authors. Special readings and reports.

246. Metrics
(4) STAFF

Introduction to Greek and Latin meter; both theory and practice will be stressed. Chief aim: to acquaint students with meters in actual use. Some account of history of metrical scholarship.

249. Seminar in Greek History
(4) JORDAN

Study and research in the major topics and problems of Greek history from the Bronze Age to the Hellenistic period.

250. Topics and Problems in Roman History
(4) MORSTEIN-MARX

Prerequisite: graduate standing.

An introduction to the advanced study of Roman history before AD 200: major historical controversies and fundamentals of historical methodology in the evaluation of literary and documentary sources.

253. Greek Epigraphy
(4) JOROAN

Prerequisite: graduate standing.

Strongly recommended: knowledge of ancient Greek.

The study of Greek inscriptions as documents for the history, religious, social, and cultural life of ancient Greece.

596AA-ZZ. Directed Reading and Research
(2-4) STAFF

Prerequisite: written proposal approved by department chair and graduate advisor.

Individual tutorial. (F,W,S)

597. Preparation for Comprehensive Exams
(1-6) STAFF

Prerequisites: consent of graduate advisor and chair.

No unit credit allowed toward degree.

Study for master's examinations and Ph.D. examinations.

599. Ph.D. Dissertation Preparation
(2-12) STAFF

Preparation of the dissertation.

Greek Courses

LOWER DIVISION

1. Elementary Greek
(4) STAFF

The beginning course in classical Greek, and first in a three-quarter sequence introducing fundamentals of grammar, syntax, and reading skills. Basic grammar and vocabulary and the syntax of simple sentences using written exercises. Interesting aspects of ancient Greek society are introduced. (F)

2. Elementary Greek
(4) STAFF

Prerequisite: Greek 1.

A continuation of Greek 1. Emphasis on mastering grammar and building vocabulary. (W)

3. Intermediate Greek
(4) STAFF

Prerequisite: Greek 2.

A continuation of Greek 2. Emphasis on building a working vocabulary and the syntax of complex sentences. Readings in classical prose introduce students to ancient Greek literature and culture. (S)

UPPER DIVISION

Greek 102 is prerequisite to Greek 113 through 173.

100. Introduction to Greek Prose
(4) STAFF

Prerequisite: Greek 3.

Not open for credit to students who have completed Greek 105.

Reading and analysis of Attic prose writers such as Xenophon, Plato to develop reading skills and introduce study of the style and thought of historical, rhetorical and/or philosophical writers. (F)

101. Introduction to Greek Poetry
(4) STAFF

Prerequisite: Greek 100.

Not open for credit to students who have completed Greek 106

Readings in the poetry of Homer to develop reading skills, introduce Homeric grammar and meter, and begin study of the style, thought and heroic world of epic poetry. (W)

102. Readings in Greek Literature
(4) STAFF

Prerequisite: Greek 101.

Selected readings in Greek prose and/or poetry designed to develop reading proficiency, and to help students make the transition to more advanced study of classical Greek literature.

110. Attic Orators
(4) STAFF

Prerequisite: Greek 102.

May be repeated for credit in combination with Greek 108 to a maximum of 8 units with consent of instructor.

Reading and study of Attic orators such as Demosthenes, Lysias, Aeschines and Isocrates, with attention to the language, style, and rhetoric of the speeches, and to their political and historical context.

111. The New Testament
(4) STAFF

Prerequisite: Greek 102.

May be repeated for credit to a maximum of 8 units with consent of instructor.

Reading and study of selected passages from the Greek New Testament.

113. Lucian
(4) STAFF

Reading and study of selected passages from Lucian, with attention to the language and style of his satirical dialogues, and to their social and historical context.

138. Pre-Socratic Philosophers
(4) STAFF

Philological study in materials ranging from Thales through Democritus.

142A-B. Plato
(4-4) STAFF
Reading and study of a complete Socratic dialogue.

143. Post-Platonic Philosophers
(4) STAFF
Philological study in materials ranging from Aristotle through Plotinus.

151. Euripides
(4) STAFF
Reading and study of a complete play by Euripides. Introduction to the language, meter and values of Greek tragedy.

152. Sophocles
(4) STAFF
Reading and study of a complete play by Sophocles. Introduction to the language, meter and values of Greek tragedy.

153. Aeschylus
(4) STAFF
Reading and study of a complete play by Aeschylus. Introduction to the language, meter and values of Greek tragedy.

154. Aristophanes
(4) STAFF
Reading and study of a complete play by Aristophanes. Introduction to the language, meter and values of Greek comedy.

158. Homer
(4) STAFF
Reading and study of selections from the *Iliad* and/or *Odyssey.*

161. Hesiod, Theognis, and Solon
(4) STAFF
Reading and study of archaic poets.

162. Herodotus
(4) STAFF
Reading and study of the histories of Herodotus.

163. Thucydides
(4) STAFF
Reading and research in the historical, literary, and philological aspects of Thucydides.

165. Xenophon
(4) STAFF
Reading and study of selected works.

171. Lyric Poets and Homeric Hymns
(4) STAFF
Reading and study of lyric poems and Homeric hymns.

172. Pindar
(4) STAFF
Reading, interpretation, metrical study, and textual criticism. Introduction to other choral poets.

173. Hellenistic Poets
(4) STAFF
Introduction to the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus, and Theocritus.

199. Independent Studies in Greek
(1-5) STAFF
Prerequisites: consent of instructor and department; upper-division standing; completion of two upper-division courses in Greek.
Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Independent investigations in Greek language and literature.

GRADUATE COURSES

Greek courses 210-273 address the same subjects as the undergraduate courses bearing the corresponding numeration. However, treatment of the subjects is at the graduate level.

210. Attic Orators
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit in combination with Greek 208 to a maximum of 12 units.
(cf. 110)

213. Lucian
(4) STAFF
Prerequisite: graduate standing.
Not open for credit to students who have completed Greek 207.
(cf. 113)

238. Pre-Socratic Philosophers
(4) STAFF
Prerequisite: graduate standing.
(cf. 138)

240A-B. Greek Prose Composition
(2-2) STAFF
Prerequisite: Greek 102.
Advanced grammar, sight-reading, and extended prose composition.

241AA-ZZ. Seminar in Greek Literature
(4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit provided letter designations are different.
Intensive study and research in a Greek author or genre. Author varies.

242A-B. Plato
(4-4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 142 A-B)

243. Post-Platonic Philosophers
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 143)

251. Euripides
(4) STAFF
Prerequisite: graduate standing.
Reading of a complete play by Euripides, with further study in text and interpretation.

252. Sophocles
(4) STAFF
Prerequisite: graduate standing.
Reading of a complete play by Sophocles, with further study in text and interpretation.

253. Aeschylus
(4) STAFF
Prerequisite: graduate standing.
Reading of a complete play by Aeschylus, with further study in text and interpretation.

254. Aristophanes
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
Reading of a complete play by Aristophanes, with further study in text and interpretation.

258. Homer
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 158)

259. Greek Literary Theory
(4) STAFF
Prerequisite: graduate standing.
This course provides a comprehensive and critical view of the nature of Greek critical theory and practice from the Sophists to the Second Sophistic, and will touch on the relationship between ancient and modern critical theory.

261. Hesiod, Theognis, and Solon
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 161)

262. Herodotus
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 162)

263. Thucydides
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 163)

265. Xenophon
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 165)

266. Polybius
(4) MORSTEIN-MARX
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
Reading and study of selections from the Histories.

271. Lyric Poets and Homeric Hymns
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 171)

272. Pindar
(4) STAFF
Prerequisite: graduate standing.
(cf. 172)

273. Hellenistic Poets
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum 12 units.
Intensive study in the Alexandrian poetry of Apollonius of Rhodes, Callimachus, Theocritus, or others.

596AA-ZZ. Directed Reading and Research
(2-4) STAFF
Prerequisite: written proposal approved by department chair and graduate advisor.
Individual tutorial. (F,W,S)

598AA-ZZ. Master's Thesis Research and Preparation
(1-4) STAFF
Prerequisites: graduate standing and consent of instructor and graduate advisor.
No unit credit allowed toward degree.
Independent research. (F,W,S)

599. Ph.D. Dissertation Preparation
(2-12) STAFF
Terminal preparation of the dissertation. (F,W,S)

Latin Courses

LOWER DIVISION

1. Elementary Latin
(4) STAFF
The beginning course in classical Latin, and first in a three-quarter sequence introducing fundamentals of grammar, syntax, and reading skills. Basic grammar and vocabulary and the syntax of simple sentences using written exercises. Interesting aspects of ancient Roman society are introduced. (F)

2. Elementary Latin
(4) STAFF
Prerequisite: Latin 1.
A continuation of Latin 1. Emphasis on mastering grammar and building vocabulary. (W)

3. Intermediate Latin
(4) STAFF
Prerequisite: Latin 2.

A continuation of Latin 2. Emphasis on building a working vocabulary and the syntax of complex sentences. Readings in classical prose introduce students to ancient Roman literature and culture. (S)

UPPER DIVISION

Latin 102 is prerequisite to Latin 111 through 138.

100. Introduction to Latin Prose
(4) STAFF
Prerequisite: Latin 3.
Not open for credit to students who have completed Latin 105.
Reading and analysis of various Latin prose authors to develop reading skills and introduce study of the style and thought of historical, rhetorical and/or philosophical writers. (F)

101. Introduction to Latin Poetry
(4) STAFF
Prerequisite: Latin 100.
Not open for credit to students who have completed Latin 106.
Readings in various authors (often including Catullus and Ovid) to develop reading skills, introduce an understanding of meter, and begin study of the style and thought of Latin poetry. (W)

102. Readings in Latin Literature
(4) STAFF
Prerequisite: Latin 101.
Selected readings in Latin prose and/or poetry designed to develop reading proficiency, and to help students make the transition to more advanced study of classical Latin literature.

103. Medieval Latin Readings
(4) STFF
Prerequisites: Latin 1, 2, and 3.
Recommended preparation: Latin 100.
Graded and selected reading and study of medieval Latin prose and verse writers.

111. Roman Epic
(4) STAFF
Backgrounds, Vergil. Introduction to later epic poets, such as Lucan and Statius.

112. Roman Elegy
(4) STAFF
Translation and discussion of the elegiac works of Tibullus, Propertius and/or Ovid. Consideration of the genre of elegy in its literary and historical contexts, with special attention to elegiac themes and motifs.

113. Roman Satire
(4) STAFF
Horace, Juvenal, Persius, and Martial.

114. Roman Comedy
(4) STAFF
Plautus and Terence. Reading of complete plays and study of the origins of Roman Comedy.

115. The Roman Novel
(4) STAFF
Reading and study of passages from Petronius and Apuleius with attention to the language and style of their satiric novels and to their social and historical context.

116A-B. Cicero: Essays, Letters, and Orations
(4-4) STAFF
Philosophical and rhetorical works and speeches.

117. Prose of the Empire
(4) STAFF
Study and reading selected from such authors as Petronius, Seneca, and Quintilian.

118. Roman Epistles
(4) STAFF
Reading, translation, and discussion of the letters of Cicero and of Pliny.

120. Sallust
(4) STAFF
Reading and philological study.

122. Livy
(4) STAFF
Prerequisite: Latin 102.
Translation and discussion of Livy's history in its literary and historical context.

123. Tacitus
(4) STAFF
Reading in the major works. Study of Tacitean style and models.

124. Caesar
(4) STAFF
Study of Caesar as historian and Latin prose stylist. Extensive reading.

125. Roman Biography
(4) HAHN
Exploration of Roman biographical writing: its historical and literary context, themes, and techniques. Translation and discussion of selections from the biographies of Nepos, Suetonius, and Tacitus, as well as biographical passages from the histories of Sallust, Livy, and Tacitus.

134. Lucretius
(4) STAFF
Reading, translation, and discussion of style and meter of Lucretius' epic poem *De Rerum Natura*.

135. Vergil
(4) STAFF
Reading , translation, and discussion of style and meter of Vergil's epic poem *Aeneid*, as well as his *Georgics* and *Eclogues*.

136. Ovid
(4) STAFF
Translation and discussion of Ovid's epic or elegiac poetry (*Metamorhoses, Fasti, Ars Amatoria, Tristia, Heroides*) in its literary, social and historical contexts.

137. Catullus
(4) STAFF
Translation, and discussion of Catullus' poetry in its literary, social and historical contexts.

138. Horace
(4) STAFF
Reading, translation, and discussion of the *Odes, Satires*, and *Epistles*.

199. Independent Studies in Latin
(1-5) STAFF
Prerequisites: consent of instructor and department; upper-division standing; completion of two upper-division courses in Latin.
Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Independent investigations in Latin language and literature.

GRADUATE COURSES

Latin courses 211-238 address the same subjects as the undergraduate courses bearing the corresponding numeration. However, treatment of the subjects is at the graduate level.

204. Graduate Reading Course in Plautus
(4) STAFF
Prerequisite: graduate standing in classics.
Reading of one or more complete plays with intensive study of various problems, e.g., origins of Roman comedy, Plautine textual criticism and metrics, nature of early Latin language.

205. Seminar in Senecan Tragedy
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
Research and discussion of the tragedies of Seneca.

206. Seminar in Neronian Literature
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
The age of Nero, prolific in literature and philosophy, had certain common themes, such as the new golden age and the nature of the principate. Selections from both Senecas, Lucan, Persius, Calpurnius Siculus will be used to explore those themes.

210A-B. Latin Prose Composition
(2-2) STAFF
Prerequisite: Latin 102.
Advanced grammar and prose composition combined with study of the development of Latin prose style.

211. Roman Epic
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units. Different work is read each time the course is offered.
(cf. 111)

212. Roman Elegy
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 112)

213. Roman Satire
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 113)

214. Roman Comedy
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 114)

215. The Roman Novel
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
Reading and study of passages from Petronius and Apuleius, with attention to the language and style of their satiric novels, and to their social and historical context.

216A-B. Cicero: Essays, Letters, and Orations
(4-4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 116A-B)

217. Prose of the Empire
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 117)

218. Roman Epistles
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units. Different work is read each time the course is offered.
(cf. 118)

220. Sallust
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 120)

221A-Z. Seminar in Latin Literature
(4) STAFF
Prerequisite: consent of instructor.
Course may be repeated for credit provided letter designations are different.
Intensive study and research in a Latin author or genre. Author varies.

222. Livy
(4) STAFF
Prerequisite: graduate standing.

May be repeated for credit to a maximum of 8 units.

Advanced grammar and prose composition combined with study of the development of Latin prose style.

223. Tacitus
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 123)

224. Caesar
(4) STAFF
Prerequisites: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 124)

225. Roman Biography
(4) HAHN
Prerequisites: graduate standing.
May be repeated for credit to a maximum of 8 units.
(cf. 125)

234. Lucretius
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
Intensive study in the poerty and Epicurean philosophy of Lucretius.

235. Vergil
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units. Different work is read each time the course is offered.
(cf. 135)

236. Ovid
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units. Different work is read each time the course is offered.
(cf. 136)

237. Catullus
(4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
(cf. 137)

238. Horace
(4) STAFF
Prerequisite: graduate standing. May be repeated for credit to a maximum of 12 units.
Intensive study in the text and interpretation of Horace.

596AA-ZZ. Directed Reading and Research
(2-4) STAFF
Prerequisite: written proposal approved by department chair and graduate advisor.
Individual tutorial. (F,W,S)

598AA-ZZ. Master's Thesis Research and Preparation
(1-4) STAFF
Prerequisites: graduate standing and consent of instructor and graduate advisor.
No unit credit allowed toward degree.
Independent research. (F,W,S)

599. Ph.D. Dissertation Presentation
(2-12) STAFF
Terminal preparation of the dissertation. (F,W,S)

Communication

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Edward I. Donnerstein, Ph.D., Florida State University, Professor (psychological effects of mass communication, media violence)

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Daniel G. Linz, Ph.D., University of Wisconsin, Professor (mass-media policy and law, mass-media effects)

Anthony Mulac, Ph.D., University of Michigan, Professor (interpersonal communication, gender and communication, language behavior)

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Affiliated Faculty

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Brenda N. Major, Ph.D. (Psychology)
Don H. Zimmerman, Ph.D. (Sociology)

Emeriti Faculty

Edwin R. Schoell, Ph.D., University of Denver, Professor Emeritus

The Department of Communication offers undergraduate coursework in interpersonal communication, mass communication, and organizational communication The program is concerned with human communication theory and research; it does not provide vocational, media production, or technical training. Degrees are offered at the B.A., M.A., and Ph.D. levels. Prospective majors are urged to consult with an advisor or departmental representative.

Students with a bachelor's degree in communication who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Senior Honors Program

Qualified majors will be invited to participate in the department's senior honors program (Communication 180 and 181A-B-C) during winter quarter of the student's junior year. Requirements include junior standing at the time of application, minimum grade-point average of 3.5 and completion of 12 upper-division major units prior to the end of the junior year. Students admitted into the program enroll in a thesis preparation seminar in the spring of the junior year, and then work directly with a faculty sponsor throughout the senior year to complete an in-depth project culminating in a senior thesis. Students successfully completing the program will be eligible for graduation with Distinction in the Major.

Undergraduate Program

Bachelor of Arts—Communication

The major in communication consists of two tiers of courses: pre-major (Communication 1, 87, 88, 89); and upper-division courses.

Preparation for the major. Students must complete each of the following requirements before petitioning the department to change from pre-major to major status: (1) Communication 1, 87, 88, and 89. (2) Communication 1, 87, 88, 89 must be completed with a combined grade-point average in these four courses of 3.0 or better. (3) In completing the four courses above, students must earn no grade lower than a C-.

Before these preparatory requirements are completed, and after the completion of at least one of the four courses above (Communication 1, 87, 88, 89); students may declare a pre-communication major. Upon successful completion of these requirements, students may petition for full major status, generally prior to the accumulation of 100 units, but not after the completion of 144 units. Admission to the pre-major does not guarantee admission to the communication major regardless of the number of communication units taken.

Upper-division major. Forty upper-division units are required for the major. There are no

specific required courses, but the following credit requirements and limitations are in effect: (1) students may apply one elective course outside the Department of Communication from the following courses: Linguistics 130, 131, 132, 133, 185; Political Science 154, 171; Psychology 102, 127, 138, 140; Sociology 133, 136, 136Q, 141, 143; (2) students may apply only 4 units each of Communication 156 and 157; (3) students may apply only 12 units of Communication 181A-B-C; (4) students may apply only 12 units of Communication 194, 199, and 199RA; (5) students may only apply a total of 16 units combined of Communication 181A-B-C, 194, 199, and 199RA.

Graduate Program

Graduate training in the Department of Communication is provided in interpersonal communication, mass communication, and organizational communication. In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB." Since the M.A. degree is designed to prepare students for the Ph.D., students without a master's degree should apply to both degree programs. Students interested in attaining a master's degree only will normally not be considered for the program.

Admission

In addition to departmental requirements for admission, applicants must also fulfill the university requirements for admission described in the chapter "Graduate Education at UCSB." For admission to the five-year M.A./Ph.D. program, applicants will be evaluated on their undergraduate record (usually majoring in communication); statement of purpose; the verbal, quantitative, and analytical portions of the Graduate Record Examination; and three letters of recommendation. Normally, those admitted to the Ph.D. program will have pursued master's level research by means of an empirical thesis, although this is not necessary if applicants can demonstrate research experience and/or have outstanding potential for doctoral research.

Applications may be obtained from the Department of Communication. Fellowships and teaching assistantships are available, although competition for these is intense. The deadline for fellowship applications is January 15. The regular application deadline for admittance to the program is March 15.

Degree Requirements

The department offers a plan leading to the degree of Ph.D. in communication, the successful pursuit of which demands that the student complete a high-caliber thesis for the master's degree, normally by the end of two years. Assuming faculty endorsement of doctoral research potential, the student then works toward completing coursework, undertakes written and oral qualifying examinations, and completes a dissertation, normally by the end of three years.

At the M.A. level, students are required to take three core introductory courses in communication, 16 units in their major research area, 8 units in a minor area, and 8 statistics or tool equivalent units. (Note: The university requires master's students following the thesis option to complete at least 20 graduate units in the major or related fields numbered either 200-299 or 596; no more than half—i.e., 10—can be in 596 coursework.) At the Ph.D. level, students take 12 additional units in their primary research area, 8 units of theoretical breadth, 8 units of statistics, and 12 units of cognate courses outside the department. Students entering with a master's degree from another university must consult with the graduate advisor to ensure that they have completed sufficient coursework at the master's level. At a minimum, students should have completed one methods course in communication and two statistics courses during their M.A. work at another institution.

A quarterly research colloquium is required of all graduate students in the department and directed research units are strongly encouraged throughout a student's program of study.

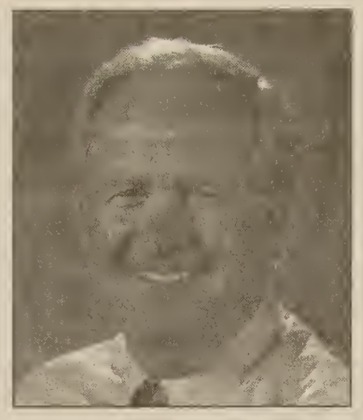
Optional Ph.D. Emphasis in Human Development

Students pursuing a Ph.D. in this department may petition to add an emphasis in human development. The interdisciplinary program in human development (IHD) involves faculty from the Ph.D. programs in communication, counseling/clinical/school psychology, education, linguistics, psychology, and sociology. The program focuses on developmental theory and research across the lifespan, and may be particularly relevant to the dissertation research of some students. The program features a structured set of courses that are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in human development must fulfill the following requirements in addition to the requirements for the Ph.D. in their home department: (1) six quarters of proseminar Interdisciplinary 592; (2) four courses in addition to the proseminar, two of which must be outside the student's home department; (3) a minimum of one member of the student's doctoral committee must be a ladder faculty member officially affiliated with the interdisciplinary program in human development. Consult the department for additional information.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences

Students pursuing a Ph.D. in this department may petition to add an interdisciplinary emphasis in quantitative methods in the social sciences (QMSS). This new interdisciplinary emphasis involves faculty from the Ph.D. programs in communication, economics, education, geography, political science, psychology, sociology, and statistics and applied probability. The areas of specialization of the participating faculty include advanced regression modeling techniques, multivariate statistics, bootstrap estimation methods, demography, econometrics, psychometrics, social network theory, mathematical psychology, spatial statistics, survey research, and educational and psychological assessment. The



Howard Giles

PROFESSOR, COMMUNICATION

Communication professor Howard Giles is an interaction specialist. In his undergraduate and graduate courses on intergroup, intergenerational, and intercultural communication, he examines conflicts between people, focusing on how they see themselves as members of social groups, and how that contributes to their sense of well-being.

"I want to open students' minds."

"I want to open students' minds to important areas of social life they hadn't really thought about before. I hope they take what we've discussed in class and allow it to influence other courses they take as well as how they communicate throughout the rest of their lives."

Giles became aware of his interest in communication while working as an attendent in a medical clinic in his native Wales.

"The patients I took to the physicians just had to open their mouths and speak and I could predict the manner in which the physicians were going to deal with them," he says. The physicians responded more actively to certain tones of voice and attitudes and gave patients who displayed them more time and attention than they gave others.

That single concept was enough to spark Giles's interest in the way people communicate and perceive themselves in relation to others.

QMSS emphasis helps students to attain the competencies needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methodologies, and participation in interdisciplinary colloquia and research projects.

Each admitted student will develop, with his or her advisor, an individual contract listing the QMSS requirements to be completed. The contract must include the following:

Two quarters of calculus, one quarter in linear algebra, and a one-year statistics sequence (These requirements can be waived if equivalent courses have already been completed).

Attendance for at least three quarters at the ongoing QMSS seminar series, including presentation of at least one paper.

Completion of at least three quantitative methods courses (excluding those listed above) or at least two of which are outside the student's home department.

A Ph.D. dissertation that is centrally focused on an issue that is appropriate to the QMSS emphasis. The dissertation may make a contribution to methodological theory or may involve an advanced or innovative application.

A dissertation committee that includes at least one QMSS faculty member from outside the student's home department.

Consult the department for additional information.

Communication Courses

LOWER DIVISION

1. Introduction to Communication
(4) STAFF

Prerequisite: not open to seniors.

Survey of basic concepts, principles, and models of communication. Introduction to the importance of communication in intrapersonal, interpersonal, small group, organizational, and mass media contexts.

1H. Introduction to Communication/ Honors
(1) STAFF

Prerequisites: concurrent enrollment in Communication 1; honors students only.

Enrichment section accompanying Communication 1 for Letters and Science honors students.

87. Statistical Analysis for Communication
(4) STAFF

Not open for credit to students who have completed PSTAT 5AA-ZZ or Sociology 3 or EEMB 30 or Psychology 5 or equivalent.

An introduction to basic statistical concepts and applications in communication. Through lecture and computer labs, students will be exposed to statistical applications for advanced coursework in the major.

88. Communication Research Methods
(4) STAFF

An introduction to social scientific research designs used in the field of communication, including survey research, experimental design, content analysis, and field research.

89. Theories of Communication
(4) STAFF

Prerequisite: Communication 1.

An introduction to major theories and theoretical influences in the field of communication, in the areas of interpersonal, small group, organizational, and mass communication.

95. Nature and Impact of the Mass Media
(4) STAFF

Examines the structure and functioning of various media industries, from print to electronic communication. Explores factors that influence the creation and distribution of media messages, and considers the effects of media content on audiences and social institutions.

UPPER DIVISION

106. Small Group Communication
(4) STAFF

Theory and research in communication in group and work unit contexts. Includes experiential laboratory in which students observe and analyze communication processes in small groups.

107A. Interpersonal Communication: Relationships
(4) STAFF

Survey of theories of interpersonal communication in social and intimate relational contexts, with particular attention to role enactment, deterioration of relationships, and communicative competence.

107B. Interpersonal Communication: Conversational Interaction
(4) KELLERMANN

Analyzes how conversational behavior is generated, enacted, and understood. Examines conversational goals, plans, strategies, and tactics. Explores the structure, pattern, sequencing, and regulation of conversation in interpersonal interaction.

108. Acquisition of Communicative Behavior
(4) STAFF

Survey of research and theory on the development of communicative competence.

109. Language and Human Behavior
(4) STAFF

A study of the role of language in our behavioral patterns. Discussions, demonstrations and experiments are supplemented by readings from a wide variety of authorities on language science. Includes both verbal and nonverbal aspects of language behavior.

110. Language and Communication Processes
(4) STAFF

Theory and research on the role of language in various communication contexts. Topics include: the nature of signs and symbols; language, perception and thought; social psychological factors in verbal encoding; and language and impression formation.

111. Nonverbal Communication in Human Interaction
(4) STAFF

A review of theories and empirical research on the role of paralinguistic and kinesic message-behaviors in face-to-face communication. Students will conduct and report original field or laboratory studies of nonverbal communication.

112. History of Mass Communication Institutions
(4) STAFF

Development of mass media institutions, such as press, radio, television. Emphasis on relationship between shape of media institutions and economic, government, and social controls, past, present, and future.

113. Mass Communication and Human Behavior
(4) STAFF

Theories of mass communication in relation to interpersonal communication processes. Analysis of behavior of audiences of the mass media. Emphasis on family interaction, persuasion theory, media effects on children and minorities, sex-role stereotyping, and techniques of audience measurement.

114. Mass Communication and Society
(4) STAFF

Theoretical analysis of the processes and effects of mass media on society. Special attention to social theories that inform our understanding of mass communication.

115. New Communication Technology and Society
(4) STAFF

Examination of the technological infrastructure of the "information society." Survey of wired and wireless communication systems. Emphasis on the convergence of telephone, computer, and broadcasting industries and its impact on government regulations and society as a whole.

116. The Internet, Communication, and Contemporary Society
(4) STAFF

Introduction to the Internet as an emerging mass communication medium. Course will review theories of communication technology as related to the Internet and examine its impact on society. Topics include computer-mediated communication, freedom of speech, privacy, democracy, and electronic commerce.

117. Persuasion
(4) KELLERMANN

Analysis and synthesis of current persuasion theory to understand how messages influence attitudes and behaviors. Topics covered include: theories for altering attitudes and behaviors, the persuasion process, and the use of persuasion in applied contexts.

118. Communication Technology and Organization
(4) FLANAGIN

Exploration of the role that communication technologies play in the organization of social activity and the formation and maintenance of relatively stable and enduring organizations that result from their use.

119. Intergenerational Communication
(4) GILES

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Introduction to our changing communication needs as we age, the dynamics of intergenerational contact, and communicative consequences of being elderly.

120. Interviewing Theory and Practice
(4) STAFF

Analysis of the interview as a unique communication context, including the application of theoretical concepts and practice in designing and conducting interviews of various types (e.g., employment, information giving, counseling).

121. Communication and Conflict
(4) STAFF

Theory and research on communication and conflict in various contexts. Experiential laboratory in which students observe and analyze conflict through the use of simulations and exercises.

122A. Micro Organizational Communication
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Application of communication theory and research to ongoing organizations, with special emphasis on communication causes, correlates, and consequences of internal organizational processes experienced at individual, group, and organizational levels.

122B. Macro Organizational Communication
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Focus on the broad context of organizational communication. Topics include theory and research on the influence of markets, administrative structures, institutions, and national differences upon

communication outcomes, and effects of organizational communication practices on these structures.

122C. Communication, Collaboration, and Organization
(4) FLANAGIN

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Focus on issues of how to induce and coordinate cooperation and collaboration among individuals, within and between organizations, in light of the capabilities of advanced communication and information technologies.

123. Cultural Influences on Communication
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Cross-cultural influences on communication processes. May deal with face-to-face or electronically mediated communication.

124. Family Communication
(4) STAFF

Communication strategies and patterns in intimate, enduring relationships. Topics include partner selection, parenting, marital roles and conflict.

125. Pragmatics of Human Communication
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Interpersonal communication theory and research from an interactional perspective. Emphasis on the work of Gregory Bateson.

126. Gender and Communication
(4) MULAC

Nonverbal and verbal differences and similarities in the messages of male and female communicators. Topics include: acquisition of gender-linked differences, effects they have in interpersonal settings, and their modification through interpersonal accommodation.

127. Discourse Analysis
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Survey of theory and technique of discourse analysis, with emphasis on how the study of language in its social and cognitive context illuminates social interaction.

128. Language and Intergroup Communication
(4) GILES

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Survey of theory and research concerning language and communication between various social groups (e.g., intersocial and interethnic groups), with emphasis on understanding the role communication plays in integrating and differentiating group members.

130. Political Communication
(4) EVELAND

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Overview of the role of communication in politics and public opinion. Exploration of research on the content of a variety of forms of political communication and the cognitive, attitudinal, and behavioral effects of this communication on the public.

132. Mass Media Policy and Regulation
(4) STAFF

Introduction to the process by which communication policy is constructed, including analysis of the role of key participants. Survey of the fundamental regulatory structure governing broadcasting and other electronic media. Examination of current media policies.

133. Mass Communication and Children
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Examines children's reactions to mass media, emphasizing role of television. Includes analysis of children's cognitive processing of media and study of effects in such areas as violent portrayals, prosocial messages, and advertising content. Considers policy implications of research.

134. Developing Issues in Mass Communication
(4) STAFF

Analysis of theory and research in how mass media messages are shaped by media institutions and how individuals process these messages. Emphasis placed on broadcast news, politics, and social campaigns.

135. Mass Communication and Ethnic/Racial Groups
(4) STAFF

Prerequisites: Communication 1, 88, and 89; open only to communication and interdisciplinary studies majors.

Theory and analysis of the problems and characteristics of mass communication with reference to media ownership and structure, including content and effects of programs on ethnic/racial groups.

150. Advanced Group Communication
(4) STAFF

Prerequisites: Communication 106; open only to communication and interdisciplinary studies majors.

In-depth focus on salient issues in group communication. Covers relevant theory and research in topic area.

151. Advanced Interpersonal Communication
(4) STAFF

Prerequisites: Communication 107 or 108; open to communication and interdisciplinary studies majors only.

Intensive analysis of current theory and research in a selected area of interpersonal communication, with special attention to theory development and testing. Topics vary each quarter.

152. Advanced Organizational Communication
(4) STAFF

Prerequisites: Communication 122; open to communication and interdisciplinary studies majors only.

Intensive analysis of current theory and research in selected areas of organizational communication. Topics include organizational communication diagnosis and auditing, organizational innovation and change, and communication management.

155. Communication in Health Care Delivery
(4) STAFF

The role communication plays in the delivery and reception of health care from the perspectives of both provider and client.

156. Advanced Nonverbal Communication Analysis
(4) STAFF

Prerequisites: Communication 111; open to communication and interdisciplinary studies majors only.

Advanced study of paralinguistic and kinesic message-behavior in face-to-face communication. Pertinent nonverbal variables will be identified through survey of empirical research and applied to analysis of communication samples.

157. Advanced Language Behavior Analysis
(4) MULAC

Prerequisites: Communication 89; open to communication and interdisciplinary studies majors only.

Advanced study of language behavior and its effects in various communication settings. Pertinent language variables will be identified through survey of empirical language-effects research and then applied to analysis of communication samples.

158. Advanced Language and Communication Processes
(4) STAFF

Prerequisites: Communication 109 or 110 or 111; open to communication and interdisciplinary studies majors only.

Intensive scrutiny of current theory and research on linguistic aspects of communication. Topics will vary each quarter.

159. Advanced Language and Intergroup Communication
(4) GILES

Communication 1, 88, 89, and 128.

Focused study of theories of intergroup relations and intergroup communication together with specific orientation towards certain groups in contact. Class will involve group research projects.

161. Advanced Mass Communication
(4) STAFF

Prerequisites: Communication 112 or 113 or 114; open to communication and interdisciplinary studies majors only.

May be repeated for a maximum of 12 units.

Investigation of current theory and research in a selected area of mass communication. Variable topics, including comparative media systems, social effects of specific genres, implications of new communication technologies.

170. Communication Law
(4) STAFF

A historical survey of the development of the concept of free speech, and a study of First Amendment controversies in the United States during the twentieth and twenty-first centuries.

171. Quantitative Methods
(4) MULAC

Prerequisites: Communication 89.

The methodology for quantitative research in communication. Computation of standard statistical procedures, measurement theory, and experimental design.

172. Advanced Communication Theory and Research
(4) STAFF

May be repeated for credit to a maximum of 12 units.

Integration and synthesis of theories and research between at least two core areas of communication. Variable topics, such as family relationships, health, or intercultural communication will be the focus of these integrations.

173. Qualitative Methods
(4) STAFF

Prerequisites: Communication 89; open only to communication and interdisciplinary studies majors.

Covers an array of interpretive techniques which seek to describe, decode, translate, and understand the meaning of naturally occurring communicative phenomena.

180. Senior Honors Seminar
(4) KUNKEL

Prerequisite: Junior standing.

Must have a 3.5 cumulative G.P.A.

Seminar offered spring quarter covering methodological, theoretical, and procedural issues involved in undertaking a senior thesis.

181A-B-C. Senior Honors Thesis
(4) KUNKEL

Prerequisites: Communication 180; open to senior honors students only.

A three-quarter sequence course with grades given for each course.

Independent work with faculty sponsor culminating in senior thesis.

191A. Practicum in Human Communication
(1) STAFF

Prerequisite: consent of instructor.

Course may be repeated to a maximum of 3 units.

Provides faculty supervision for students

participating in formal, practical work experiences. Written proposal required.

191B. Applying Communication to Internships in Organizations
(4) STAFF

Prerequisite: upper-division standing.

Not open to students who have received credit for Communication 191C.

Integrate field work experience with communication theory and current literature. Weekly lecture to be concurrent with internship in the field of communication. Lecture topics include theories of interpersonal communication, organization structures, management, and communication styles.

194. Group Studies for Advanced Students
(1-12) STAFF

Prerequisites: upper-division standing.

May be repeated for a maximum of 12 units.

Selected topics in accordance with instructor's area of specialization.

199. Independent Studies in Communication
(1-5) STAFF

Prerequisites: open to seniors of proven scholastic ability by consent of department and instructor; upper-division standing; completion of two upper-division courses in communication.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Written proposal required.

199RA. Independent Research Assistance in Communication
(1-5) STAFF

Prerequisites: consent of department and instructor; upper-division standing; completion of two upper-division courses in communication.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Written proposal required.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

200. Communication Theory Construction
(4) LAMMERS

The nature of theory and theory building in human communication.

201. Communication Theory
(4) LEPOIRE

This course provides a broad overview to the study of human communication by surveying theories of language, interpersonal communication, persuasion, small group communication, organizational communication, and mass communication.

204A. Research Methods in Communication
(4) DONNERSTEIN

Criticism of behavioral research in communication.

204B. Applications in Research Methods in Communication
(4) LINZ

Prerequisite: Communication 204A.

The course will provide students with hands-on experience with computer programs designed for analysis of communication-related data. Analyses will include, multiple regression, MANOVA, log linear, and other advanced techniques.

204C. Survey of Research Methods
(4) EVELAND

Recommended preparation: basic methodological skills. No prior experience with survey research methods required.

A course providing students with the tools needed to conduct survey research across a range of substantive areas. Topics include questionnaire construction, response effects, sampling, non-response, and data collection.

206. Seminar: Group Communication
(4) SEIBOLD

Readings in communication theory and design of research projects on small group communication.

207. Seminar: Interpersonal Communication
(4) WIEMANN

Analysis of theory and research related to interpersonal communication processes, with an emphasis on informal and intimate relationships. Development and implementation of student research.

210. Seminar: Language and Communication Processes
(4) BRADAC

Variable topics, focusing on the role of language in attribution and communication.

211. Seminar: Nonverbal Communication
(4) WIEMANN

Analysis of nonverbal behavior as communication, with special emphasis on design and implementation of research.

213. Seminar: Theories of Mass Communication
(4) DONNERSTEIN

Cognitive and social process theories of mass communication. Design and implementation of research strategies for message and audience analysis.

214. Social Psychological Effects of the Mass Media
(4) DONNERSTEIN

Prerequisites: Communication 200 and 201.

A survey of the psychological and social effects of the mass media. Focus will be on empirical research as it informs communication theory.

221. Seminar: Communication and Conflict
(4) STAFF

Theory and research on the process of communication in conflict situations.

222A. Seminar: Micro Organizational Communication
(4) SEIBOLD

Analysis of internal organizational communication. Theory and research topics include decision making, communication climate, structuration, superior-subordinate communication.

222B. Seminar: Macro Organizational Communication
(4) LAMMERS

Analysis of external organizational communication. Topics include theory and research on the influence of the organizational environment; administrative, market, cultural, political, and institutional structures; and the influence of communication practices on these structures.

222C. Seminar: Technology and Organization
(4) FLANAGIN

Examination of critical issues in contemporary communication theory and research implicating advanced communication and information technologies and their relation to organizational dynamics, structure, and change.

223. Seminar: Communication and Culture
(4) STAFF

Theory and literature of the ethnography of communication, with particular reference to the question of how to discover, describe, and interpret a community's culture patterns of communication.

224. Seminar: Family Communication
(4) LEPOIRE

Theory and research on communication in familial relationships. Focus on development, maintenance, and disintegration of families. Special consideration will be given to developmental stages of families (attachment) and families with members who are failing to function in some capacity.

225. Seminar: Pragmatics of Human Communication
(4) WIEMANN

Seminar on the symbol-user relationship. Takes an interactional view of interpersonal communication.

226. Seminar: Gender and Communication
(4) MULAC

Nonverbal and verbal differences and similarities in the communication of males and females. Theoretical perspectives include the gender-linked language effect, speech accommodation theory, and sex-role stereotypes. Acquisition and maintenance of gender-linked differences are discussed.

228. Seminar: Intercultural Communication Theories
(4) GILES

Analysis of theory and research related to intergroup relations, with special attention to the role of language use and variation as a means of communicating about intergroup relations.

229. Intergenerational Communication and Aging
(4) GILES

Theory, research and practice in communication and aging. Focus on intergenerational discourse, age identity and psychological well being.

231. Telecommunications and Information Policy
(4) STAFF

Study and review of the U.S. telecommunications and information policy. Emphases on the 1996 Telecommunications Act, the spectrum reform, and the National Information Infrastructure. Examination of the intellectual and technological bases for policy changes, as well as the policy-making process.

232. Mass Media Policy and Regulation
(4) KUNKEL

Survey of the fundamental and regulatory policies governing electronic mass media, emphasizing broadcast television. Considers both structural and content-based regulation. Analyzes the policy-making process as well as the outcome of major communication policy decisions.

233. Seminar: Mass Communication and Children
(4) WILSON

Theories and empirical research on contribution of mass communication to socialization processes of children and adolescents.

234. Cognition and Mass Communication
(4) WILSON

Prerequisites: Communication 200, 201, and 214.

Review of current research of theories in the cognitive processing of mass media. Special consideration will be given to attention and memory for television.

250. Contemporary Issues in Communication Science
(4) WIEMANN

Prerequisites: Communication 200 and 201.

Critical examination of a selected aspect of contemporary communication theory and research. Topic varies from year to year.

252. Management Communication: Theory and Practice
(4) LAMMERS

Prerequisite: consent of instructor.

A practical workshop, applying theory to writing and presenting in career-appropriate organizational settings. Prepares students to make effective written and oral presentations of sophisticated, technical information before audiences in non-academic organizations. Practice opportunities, field observations, and video tape-recorded presentations.

500. Teaching College Communication
(3) STAFF

Theory of teaching communication at the college level. Topics include self-presentation, facilitating discussion, constructing examinations, grading examinations and term papers, providing feedback, and professionalism.

501. Apprentice Teaching
(3) STAFF
Prerequisite: Communication 500 (may be taken concurrently).
No unit credit allowed toward advanced degree.
Application of theory to the practices of teaching college courses in communication. Students will issue assignments, conduct class discussions, prepare and deliver lectures, score tests, and assign grades under the supervision of the faculty member who is the course director.

502. Practicum for Teaching Associates
(3) STAFF
Prerequisite: Communication 500.
No unit credit allowed toward advanced degree.
Theory and practice of teaching undergraduate classes in communication. Topics include the selection of behavioral objectives, selection of texts and other materials, creation of syllabi, preparation of lectures and assignments, administration of examination, and maintenance of standards.

503. Research Practicum
(3) STAFF
No unit credit allowed toward advanced degree.
A practicum for research associates.

505. Issues in Communication Research
(1) STAFF
Prerequisites: graduate standing.
Enrollment is mandatory each quarter that a student is in residence; units do not fulfill degree requirements.
Presentation of research completed or in progress by students, faculty and guest speakers followed by critical discussion of the issues raised.

593A-Z. Directed Reading
(2-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 12 units.
Individual tutorial. Provides students with the same material as a regular course except it is conducted on an individual basis with a faculty member. Written contract describing the course, readings, and assignments should be submitted to the departmental graduate adviser.

594A-Z. Special Topics
(1-4) STAFF
Prerequisite: consent of instructor.
Special seminar on research subjects of current interest.

595A-Z. Group Studies
(4) STAFF
Prerequisite: consent of instructor.
Critical review of research in selected fields.

596A-Z. Directed Research
(2-4) STAFF
Prerequisite: consent of instructor.
May be repeated for a maximum of 12 units.
Individual tutorial. Provides students with supervised research experience including any of the following: reviewing literature, formulating research questions, designing measures, collecting and analyzing data, and writing papers. Written proposal must be approved by the departmental graduate adviser.

597A-Z. Preparation for the Qualifying Examination
(1-4) STAFF
Prerequisite: consent of graduate advisor. No unit credit allowed toward advanced degree.
Directed group or individual preparation for the master's or doctoral qualifying examination.

598A-Z. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisite: consent of thesis advisor.
The thesis is done under the direction of the chair of a student's thesis committee.

599A-Z. Dissertation Preparation
(1-12) STAFF
Prerequisites: consent of instructor; advancement to candidacy.
This course is reserved for writing the dissertation.

Comparative Literature

Comparative Literature Program,
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Paul Hernadi, Ph.D. (English)
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Affiliated Faculty

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Catherine Cole, Ph.D. (Dramatic Art)
Elizabeth Cook, Ph.D. (English)
Richard Corum, Ph.D. (English)
Francis Dunn, Ph.D. (Classics)
Ronald Egan, Ph.D. (East Asian Languages and Cultural Studies)
Jody Enders, Ph.D. (French and Italian)
Louise Fradenburg, Ph.D. (English)
Giles Gunn, Ph.D. (English)
Carl Gutierrez-Jones, Ph.D. (English)
Richard Hecht, Ph.D. (Religious Studies)
Suzanne Jill Levine, Ph.D. (Spanish and Portuguese)
Sydney Lévy, Ph.D. (French and Italian)
Kathryn Lowry, Ph.D. (East Asian Languages and Cultural Studies)
Harold Marcuse, Ph.D. (History)
David Marshall, Ph.D. (English)
William Powell, Ph.D. (East Asian Languages and Cultural Studies, Religious Studies)
Laurence Rickels, Ph.D. (Germanic, Slavic, and Semitic Studies)
Katherine Saltzman-Li, Ph.D. (East Asian Languages and Cultural Studies)
Cynthia Skenazi, Ph.D. (French and Italian)
Jon Snyder, Ph.D. (French and Italian)

Comparative literature, an interdepartmental undergraduate and graduate program combines the study of national literatures with courses that address the relationship between literature and other disciplines such as anthropology, cultural studies, gender studies, philosophy, linguistics, media and technology studies, psychoanalysis, religious studies, and the fine and performing arts.

The Comparative Literature Program offers two undergraduate major tracks leading to the B.A. degree, Comparative Literature with Foreign Language Emphasis and Comparative Literature with Interdisciplinary Emphasis, and M.A./Ph.D. and Ph.D. programs at the graduate level.

The program provides preparation for possible careers as teachers and scholars in literary and cultural studies as well as for careers that require expertise in foreign languages and familiarity with multi-cultural perspectives, such as international journalism, business, law, and diplomacy.

Senior Honors Program in Comparative Literature

The honors program in comparative literature provides the opportunity for qualified majors to pursue advanced literary research. To qualify for the program, students must maintain a grade-point average of 3.5 (overall and/or in the major) and have completed at least two quarters of the junior year at UCSB. After consulting with their advisor in comparative literature, they may then apply to a professor of their choice with whom they will work for two quarters of their senior year on the writing of a thesis, successful completion of which will merit the award of Distinction in the Major at graduation.

Students are also encouraged to apply for admission to the College of Letters and Science Honors Program as early as possible in their college careers.

Further information about the honors program is available from the honors program advisor in comparative literature and from the academic program advisor.

Undergraduate Program

Bachelor of Arts—Comparative Literature

Preparation for the major. Six quarters (or the equivalent) of a language other than English; three courses from the following: Comparative 30A, 30B, 30C, 31, 32, 33, 34; and History 4A-B-C (students may petition to substitute three courses relevant to the study of literature in history or other disciplines with approval from the faculty advisor.)

Upper-division major, Option 1, Foreign language Emphasis. A minimum of five upper-division courses in comparative literature, including Comparative Literature 100 (Introduction to Comparative Literature) and Comparative Literature 195 (Junior/Senior Seminar); six literature courses (of which a minimum of three must be in a language other than English). Students wishing to pursue graduate study in comparative literature should take Option 1 and are strongly advised to select

literature courses in two foreign languages rather than a single foreign language and English.

Upper-division major, Option 2, Interdisciplinary Emphasis. A minimum of five upper-division courses in comparative literature, including Comparative Literature 100 (Introduction to Comparative Literature) and Comparative Literature 195 (Junior/Senior Seminar); and three literature courses (of which a minimum of one course must be in a language other than English); three courses in a single ancillary discipline (chosen in consultation with student's advisor).

Minor—Comparative Literature

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in comparative literature and those offered by other departments and applied to the minor.

Preparation for the minor. Six quarters (or the equivalent) of foreign language study; two courses from the following; Comparative Literature 30A, 30B, 30C, 31, 32, 33, 34.

Upper-division minor. Twenty upper-division units, distributed as follows: Comparative Literature 100, and 16 units selected from courses in comparative literature.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

Graduate study in this program requires completion of graduate courses in comparative literature in addition to courses offered by other departments and programs. These include graduate courses in literature offered by the departments of Classics, Dramatic Art, East Asian Languages and Cultural Studies, English, French and Italian, Germanic, Slavic, and Semitic Studies, and Spanish and Portuguese. Graduate course work can also be done in related departments such as Anthropology, Communication, Film Studies, History, History of Art and Architecture, Linguistics, Music, Philosophy, Political Science, Religious Studies, Sociology, and Women's Studies. The M.A./Ph.D. is normally a six-year program. The Ph.D. for students who enter with an M.A. should take no more than four years. Applicants to the Comparative Literature Program should confirm that appropriate resources are available for their desired course of study.

In addition to meeting program requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

Admission

In addition to fulfilling all university requirements for admission to graduate status, described in the chapter "Graduate Education at UCSB," applicants to the M.A./Ph.D. program will normally have completed an undergraduate major in comparative literature or a related field. For admission to the Ph.D. program, applicants must have completed an M.A. in comparative literature or a closely related field. Admission to both programs is based on five criteria: (1) transcripts; (2) letters of recommendation; (3) scores on the GRE general test; (4) writing sample; and (5) statement of purpose. The writing sample should normally be a substantial paper written in an upper-division or graduate literature course.

Master of Arts—Comparative Literature

Degree Requirements

The M.A. requires 36 units of graduate-level course work in either (a) three national literatures, or, (b) two national literatures and one related discipline chosen in consultation with student's advisory committee. The advisory committee will consist of three faculty representing the student's fields of interest. The 36 units of graduate-level course work must include a minimum of 8 graduate units in each of two national literatures and 4 graduate units in the student's third national literature or the related discipline. Eight additional graduate units must be taken in comparative literature. A maximum of 4 units of 596 course work can be counted toward the master's degree. By the end of the second year of study, students must pass a written qualifying comprehensive examination in a national literature other than English.

Doctor of Philosophy—Comparative Literature

Degree Requirements

The Ph.D. degree in comparative literature requires the study of three fields consisting of either (a) three national literatures, or, (b) two national literatures and one related discipline. One of the literatures may be English. The other(s) must be studied in the original language. Students will have an advisory committee appointed at the end of their first year of study and composed of faculty who represent the languages and, where applicable, the related discipline. The selection of fields should be approved by the student's advisory committee.

Students entering the program with an M.A. in comparative literature or a closely related field need a minimum of 24 units of additional graduate-level course work to be distributed in consultation with the graduate advisor. Additional course work may be required to make up for deficiencies. Students entering with a master's degree will have their advisory committee appointed by the end of their first year of study. They will present their first qualifying comprehensive examination in the first quarter of their second year at UCSB. Upon completion of the 24 units of required graduate work they will present two additional written field examinations representing their choice of two additional national literatures or a national literature and a related discipline.

For students entering the program with a B.A., a total of 60 units of graduate-level course work including work done at the M.A. level is required leading to the Ph.D. A minimum of 12 units of graduate-level course work must be completed in each of the student's three fields, plus at least 12 additional units of graduate-level course work from the offerings in the Comparative Literature Program, with the remaining 12 units to be distributed among the student's fields in consultation with the student's advisory committee. The first of three qualifying comprehensive field examinations must be in a national literature other than English and is to be presented by the end of the second year of study. By this time, the first 36 units of course work should be completed. The other two field examinations and the remaining 24 units of course work should be completed by the end of the first quarter of the fourth year of study.

If necessary, students may retake each field exam one time. The written examinations are to be followed by an oral examination on the student's proposed dissertation topic administered by the dissertation committee. Students who pass this examination will be advanced to candidacy. Students working in only one foreign language will be required to take a proficiency examination in a second foreign language. The final requirement is the successful completion of a doctoral dissertation including an oral defense.

Comparative Literature Courses

LOWER DIVISION

30A-B-C. Major Works of European Literature
(4-4-4) STAFF

A survey of European literature.
A. Classical and medieval literature from Homer to Dante.
B. Renaissance and Neoclassical literature from Petrarch to Diderot.
C. Romantic and modern literature from Rousseau to Solzhenitsyn.

31. Major Works of Asian Literatures
(4) STAFF

An introduction to the diverse literary traditions of Asia through an examination of selected works. Regional focus on East, South, and Southeast Asia varies.

32. Major Works of Middle Eastern Literatures
(4) STAFF

An introduction to the diverse literary traditions of the Middle East through an examination of selected works. Regional focus on North Africa, the Middle East, and Central Asia varies.

33. Major Works of African Literatures
(4) STAFF

An introduction to the diverse literary traditions of Africa through an examination of selected works. Regional focus on North, West, East, Central, and South Africa varies.

34. Major Works of American Literatures
(4) STAFF

An introduction to the diverse literary traditions of the Americas through an examination of selected works. Regional focus on North America, the Caribbean, and Latin America varies.

UPPER DIVISION

100. Introduction to Comparative Literature
(4) DERWIN

Prerequisite: upper-division standing.

Introduction to theories and methods of comparative literary analysis and interpretation, canon formation, literary genres, periodization, and history of the discipline.

107 Voyages to the Unknown
(4) SKENAZI

Prerequisites: Writing 2 and 50.

Same course as French 146X.

The impact of the voyages of discovery on late fifteenth- and sixteenth-century Europe. Readings on real and imaginary voyages: Columbus, Cartier, Léry, More, Rabelais, Montaigne.

108. Borges and his Precursors
(4) LEVINE

Prerequisite: upper-division standing.

Focus on Borges the reader (and the creative writer as literary critic in his essays, fictions, and poetry). Traces, in particular, his cross-genre affinities with Anglo/American and European writers.

110. Oral Epics of the World
(4) REYNOLDS

Prerequisite: upper-division standing.

Introduction to folklore, performance studies, and ethnographic work on oral traditions through the study of texts and recordings from South Slavic, Arabic, Turkic, Persian and South Asian traditions.

113. Trauma, Memory, Historiography
(4) DERWIN, WEBER

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units with consent of department chair.

How do individuals, communities, cultures, nations remember and/or forget, preserve and/or erase, traumatic events?

116. Premodern Sexualities
(4) FRADENBURG

Prerequisite: upper-division standing.

Exploration of whether and how sexual practices and ideas about sex have changed significantly over time. Readings include works by several theorists and historians of sexuality and also several primary texts on sexuality from medical, philosophical, and legal traditions.

117A-B. European Romanticism
(4-4) HOFFMEISTER

Prerequisite: upper-division standing.

A. Comparative study of the origins and international development of the romantic movement from pre-romanticism to romanticism proper in Europe.

B. Contrastive analysis of the romantic hero and heroine from Goethe's Werther to Pushkin's Eugene Onegin.

119. Psychoanalytic Theory
(4) DERWIN, WEBER

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units with consent of department chair.

Topics to be addresses each quarter will be chosen from the following: origins of psychoanalysis; sado-masochism; the death-drive; psychoanalysis and the law; group-psychology; psychoanalysis and the media; literature and psychoanalysis.

120. Adventures of Chivalry, Courtship and War: Arthurian Romance and the Rise of the Chivalric Novel
(4) SHARRER

Prerequisite: upper-division standing.

Arthurian and chivalric fiction from the medieval period to the time of Cervantes. The evolution of the legends of King Arthur and the Knights of the Round Table and the rise of chivalric heroes and modes of fiction.

124. Old Comedy/New Comedy
(4) YOUNG

Prerequisite: upper-division standing.

What is comedy? Is it what prompts laughter? Is it a particular structural form? Study of theories of comedy and comic forms across cultures and times under the headings of "Old" and "New" to work through the nature of comedy.

128. Children's Literature
(4) SNYDER

Prerequisite: upper-division standing.

Classic texts and theories of children's literature, from Perrault and Wilde to Freud and Propp. Examination of narrative and ideological strategies for constructing and representing "childhood" in modernity, with emphasis on their relationship to the family and the marketplace.

129. Theory and Text: Petrarch and Shakespeare's Sonnets
(4) CORUM

Prerequisite: upper-division standing.

An opportunity to bring several powerful theoretical discourses to bear on the two most exceptional sonnet sequences of early modern cultures—Petrarch's at the beginning, Shakespeare's at the end.

133. Literature and Cognition
(4) HERNADI

Prerequisite: upper-division standing.

An inquiry into possible connections between historically evolved capacities of the human mind and major literary genres. Examples from literate and oral cultures include proverbs, poems, narratives, as well as tragic, comic, and tragicomic plays and rituals.

135. The Chinese Novel
(4) LOWRY

Prerequisite: upper-division standing.

Examines the form of the novel from a comparative perspective, exploring their themes, links to story telling, and changing readerships.

137. Mind Games
(4) LÉVY

Prerequisite: upper-division standing.

Exploration of works challenging our intellectual and cognitive faculties with paradoxes, manipulations of space and time, logical aberrations and the like. Authors may include Poe, Stevenson, Maupassant, Balzac, Melville, Borges, Kafka, Bioy-Casares, Nabokov, Cortazar, Barth, Calvino, Pynchon, Vonnegut, Queneau, Perec.

138. The Love Letter, Desire, and Fiction
(4) LOWRY

Prerequisite: upper-division standing.

From seventeenth century love letters, to the letter-novel, to experimental fiction, investigation of the form and signification of the letter, gender, and the role of desire in theories of fiction in Chinese, French, and English literature.

141. Rhetoric and Literature
(4) ENDERS

Prerequisite: upper-division standing.

Like some literature, rhetoric is the art of persuading audiences to think, feel, or do specific things. Focusing on the intersections between literary creation, style, politics and morality, this course explores the numerous connections between persuasive language and real life.

143. The Teen Age
(4) RICKELS, KITTLER, MALEUVRE

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units with consent of department chair, but only 8 units may be applied toward the major.

The culture industry of irresistibility or cuteness (from Antinous to Mickey Mouse) has regularly transformed death cults into literary culture. Bildungsroman, group psychology, community fetishism, victimology.

144. Biography in Early China and the Classical West
(4) EGAN

Prerequisite: upper-division standing.

Inquiry into the way lives were represented in early China, Greece, and Rome. Readings from primary texts in English translation (including Sima Qian, Ban Gu, Plutarch, Suetonius), with analysis of underlying cultural values.

146. Robots
(4) KITTLER

Prerequisite: upper-division standing.

From eighteenth-century clockwork automata to Turing's universal machine, investigation of the function and representation of machines in literature, philosophy, film and animation. Texts by Kant, Villiers de L'Isle-Adam, Kafka, Wiener, and Alan Turing, SciFi films and computer games.

149. Rhetoric of Crime
(4) ENDERS

Prerequisite: upper-division standing.

Not open to students who have completed French 108X.

Focusing on the interrelations between law and literature, this course examines American and European representations of crime and punishment in the lawcourts, theater, cinema, and television from Euripides to the Court-Television Network. Readings and screenings from writers, judges, and jurists. In English.

150. Contemporary Literary Criticism
(4) STAFF

Prerequisite: upper-division standing.

May be repeated twice for credit.

Studies in modern and postmodern literary theory. In any one quarter, the course will examine two or three basic orientations such as structuralism, semiotics, hermeneutics, deconstruction, or the esthetics of reception.

150A. Memory and the Study of Culture
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as German 150A and Slavic 150A. Not open for credit to students who have completed Russian 150A.

Study of the relevance of different models of remembering and forgetting for the development and the transmission of culture especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandel'shtam, and others.

152. Enlightenment Landscapes
(4) COOK

Prerequisite: upper-division standing.

A course combining from literature and history of science, approaches to eighteenth-century representations of the natural world. Texts include poems, novels, and aesthetic and scientific treaties by such authors as Erasmus, Darwin, Diderot, Gay, Goethe, Rousseau, Swift, Gilbert, White, Wordsworth.

153. Border Narratives
(4) GUTIERREZ-JONES

Prerequisite: upper-division standing.

Examination of novels, short stories, and films that engage U.S./Mexico border dynamics considering the ways diverse, interactive processes are affecting border culture, and inquiring into the ways cultural products critically respond to these processes.

159. Expatriate Writers: The Literature of Exile
(4) BERRY

Prerequisite: upper-division standing.

Examines the literature of voluntary expatriation, encompassing writers from various countries and cultures but focusing on twentieth-century European and American authors who settled in Paris and recorded their experience in fiction or non-fiction.

161. The Literatures of Central Europe
(4) SPIEKER

Prerequisite: upper-division standing.

Investigation of the prolific literatures of central Europe, one of the culturally and linguistically most diverse regions of the European continent that has produced writers such as Italo Svevo, Franz Kafka, Robert Musil, Bruno Schulz, and others.

166. Occult Literatures
(4) RICKELS

Prerequisite: upper-division standing.

With the society-wide installation of live transmission (via the telegraph) a new primal subculture of seances emerged too. Relations across long distance always also bring up relations with the long distant, the dead. Literature documents and participates in the dual relationship.

170. Literary Translation: Theory and Practice
(4) LEVINE

Prerequisite: upper-division standing.

Examination of translation and the canon,

questioning the hierarchical division between translation and original, illustrating the concept of the original as translation and the literary text as "work-in-progress" in which translation forms part of the creative process.

172. Conquest of the New World: Postmodern Fiction in North and South America
(4) LEVINE

Prerequisite: upper-division standing.

The Latin American narrative of the sixties "Boom" (Borges, Cortazar, Garcia Marquez, Fuentes, Puig) studied in relation with the North American modernists (Faulkner, Hemmingway, et al.) who influenced them, and, in turn with their impact on U.S. culture.

180. The European Renaissance
(4) HELGERSON

Prerequisite: upper-division standing.

The generic forms and cultural issues characteristic of early modern European poetry, fiction, and drama. Such authors as Petrarch, Boccaccio, More, Rabelais, Ariosto, Montaigne, Camoes, Shakespeare, Lope de Vega, and Cervantes.

185. The Short Story: North and South America
(4) MCCRACKEN

Prerequisite: upper-division standing.

A close, textual analysis of the Latin American and U.S. short story, and the collection as a hybrid literary form. Emphasis on introductory concepts of narrative theory. Authors include Anderson, Faulkner, Walker, Cisneros, Mohr, Cortazar, Carpentier, Vargas Llosa, Serna, Poniatowska, and Queiroz.

186AA-ZZ. Interdisciplinary Comparative Literature Studies
(4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Interdisciplinary examination of selected topics, theories, disciplinary issues, and/or methodological questions in the combined study of literature and other areas of the humanities and humanistic sciences. Course focus will be determined by the instructor(s).

195. Junior/Senior Seminar
(4) STAFF

Prerequisite: upper-division standing.

Selected methodological issues in comparative literature. Topics vary with each instructor.

197. Upper Division Special Topics
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units.

Content will vary with each instructor.

199. Independent Studies in Comparative Literature
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in comparative literature.

Must have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Comparative Literature 199 may be repeated for credit to a maximum of 30 units, but only 12 units may be applied toward the major.

Independent studies with any faculty member. To permit study of a subject desired by the student but not covered in course offerings.

GRADUATE COURSES

200. Seminar in Comparative Literature
(4) STAFF

Bibliographical and methodological problems of comparative literary study.

205A-B-C. History of Literary Criticism
(4-4-4) STAFF

Criticism from antiquity to the present.

250A. Memory and the Study of Culture
(4) SPIEKER

Same course as German 250A and Slavic 250A. Not open for credit to students who have completed Russian 250A.

Study of the relevance of different models of remembering and forgetting for the development and transmission of culture especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandel'shtam, and others.

251. Comparative Romanticism
(4) CARLSON

Focus on literary exchanges between England and Germany during the romantic age. Consideration of translation as an act of cultural transference by focusing on such topics as Coleridge's "German mind," the Schelegel-Tieck translations of Shakespeare, and the rage for Kotzebue on the London stage in the 1790s.

252. Aesthetics
(4) SNYDER

Readings range from German aesthetic philosophy (Kant, Hegel, Schiller, F.W. Schlegel, Schopenhauer, Nietzche) to postmodernist response to the "death of art," and deal not only with attitude, taste, and quality, but their recent transformations into scanning, estrangement, shock, etc.

253. Techno Theory
(4) KITTLER, MALEUVRE, RICKELS

With the advent of the new media technologies and the "new" discourse on technology associated with Freud and Heidegger, critical discourse has finally met its match and maker in the machine.

254. Tragedy and the Tragic
(4) CARLSON, MALEUVRE

Structure and ideology of the tragic from tragedy to philosophy, from eighteenth-century domestic drama to twentieth-century speechlessness.

256. Critical Traditions
(4) HERNADI

Significant theories of literature and related cultural formations from Plato and Aristotle to the present.

257. Death and its Representations
(4) SPIEKER, WEBER

How do we represent what presupposes our own absence, death? What is the relationship between death, language, and experience? Do texts allow us to "imagine" death? Analysis of these issues through readings of key works of literature and philosophy.

258. Mirror Stages
(4) KITTLER

This is, in the literal sense, a course on theory, namely on beholding, speculating, and contemplating in art, literature, and philosophy from Renaissance perspective to 3D animation. Texts and paintings by Leonardo da Vinci, Velasquez, Duchamp, Kant, Helmholtz, Lacan.

259. Necessity
(4) FRADENBURG

Exploration of how the concept of necessity has shaped, and been shaped by, several significant philosophical and literary traditions that address the nature of desire and freedom. Readings include material from Pre-Socratic philosophers, Aristotle and Plato, Augustine and Aquinas, Marx, Freud, Derrida, Irigaray and Kristeva.

260. Literary Translation: Theory and Practice
(4) LEVINE

Examination of translation and the canon, questioning the hierarchical division between translation and original, illustrating the concept of the original as translation and the literary text as "work-in-progress" in which translation forms part of the creative process.

261. Contemporary Literature of the Americas
(4) MCCRACKEN

A study of hybridity and postmodernity in the narrative cultural production of Latinos in the Americas, focusing on the eroding but not yet effaced borders between cultural and social spheres. Readings drawn from Latin American and U.S. Latino writers such as Garcia Canclini, Cortazar, Ricardo Piglia, Manuel Puig, Sandra Cisneros, Alejandro Morales.

262. "Epistolary Fictions"–Politics and Poetics of the Letter-Novel
(4) COOK

A selection of Anglo-European eighteenth-century material(Montesquieu, Richardson, Goethe, Austin), closing with two or three examples from the second half of the twentieth century (M. Ba (Senegalese), R. Piglia (Argentine), T. Pynchon (American).

263. History and Theory of Rhetoric
(4) ENDERS

From Plato to Derrida, rhetorical theory and its numerous cultural practices have been influential in Western literature. Focusing on the thematic, structural, and performative properties of rhetoric, this course explores its intersections with literary creation, style, politics, religion, pedagogy, and morality.

264. Chinese Theories of Literature in Comparative Perspective
(4) EGAN

Selected readings from major early texts (in English translation) on the theory and uses of literature. Attention also to recent competing analyses of Chinese literary thought in comparison with Western theories of the Classical, Romantic, and Postmodern eras.

265. Studies in Renaissance Literature: Comparative Study of Early Modern European Literature
(4) HELGERSON

Topics and content will vary and may include: the place of the domestic in early modern European drama and painting, Petrarchism and the formation of national literatures in Spain, France, and England, and Renaissance fiction from More to Cervantes.

266. Memories of the Middle Ages
(4) ENDERS, FRADENBURG

Prerequisite: graduate standing.

From the standpoints of both rhetoric and psychoanalysis, memory is a powerful cultural tool for a contextualized study of medieval English and French literature. Focusing on theoretical and literary texts, exploration of the socio-historical and cultural circumstances of remembrance, creation, mourning.

591. Teaching Assistant Practicum
(4) STAFF

Units earned do not apply toward completion of advanced degrees.

Supervised teaching of lower-division comparative literature courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

594. Special Topics
(1-4) STAFF

A special seminar on research subjects of current interest.

596. Directed Reading and Research
(2-18) STAFF

Minimum of 2 units per quarter. No more than half of units required for M.A. may be taken in 596 series. Letter grade only.

Individual tutorial. A written proposal for each tutorial must be approved by the program chair.

597. Individual Study for M.A. Comprehensive and Ph.D. Examinations
(1-12) STAFF

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per examination (12 units maximum in any one examination quarter). S/U grading only.

For individual study with major professor or chair or director of student's program.

598. Master's Thesis Research and Preparation
(2-12) STAFF
No unit credit allowed toward advanced degree. S/U grading only.
For research and writing of the master's thesis.

599. Ph.D. Dissertation Research and Preparation
(2-12) STAFF
S/U grading only. May be repeated to a maximum of 12 units.
For research and writing of the doctoral dissertation. Instructor should be chair of the student's doctoral committee.

Computer Science
(Letters and Science)

**Department of Computer Science,
Engineering I, Room 2106;
Telephone (805) 893-4321**

The College of Letters and Science offers a bachelor of arts degree in computer science in cooperation with the Department of Computer Science in the College of Engineering. Both the B.A. and B.S. degree programs in computer science are accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. Students begin the curriculum by declaring a pre-computer science major.

Students in other majors should note that enrollment in some computer science courses is restricted to declared pre- and full computer science majors. Students who are admitted to UCSB in a different major (or undeclared) and who are planning to enter the pre-computer science program must complete at least 16 units of pre-major coursework at UCSB, including 8 units in computer science, with at least a 3.0 grade-point average for all pre-major courses completed at the University of California. Students who have completed the entire computer science pre-major with at least a 2.75 University of California grade-point average will be admitted to full major standing upon petition whether or not they have been officially declared pre-majors. Petitions for changing to the pre-computer science or computer science majors may be filed any time upon meeting the above requirements.

Students may satisfy some of the requirements for the computer science degree through the College Board Advanced Placement Tests. With a score of 3, 4, or 5 on Computer Science Examination AB, equivalent credit will be granted for the university course Computer Science 5PA. A score of 4 or 5 may be substituted for Computer Science 10 at the student's request by petition; however, students with high scores may take Computer Science 10 for full credit. Students substituting AP credit for Computer Science 10 must take Computer Science 11JA before enrolling in Computer Science 20.

For additional information concerning the programs in computer science, see the entry of the Department of Computer Science in the College of Engineering, which describes departmental facilities, faculty, advising services, courses offered, career opportunities, and graduate study.

Students with a bachelor's degree in computer science who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Program

Bachelor of Arts—Computer Science

Preparation for the major. The following courses must be completed with a minimum grade-point average of 2.75 before the student will be admitted to full major status. Courses identified as options are considered equivalent; students may take one of them to satisfy the requirement, but they may not take more of them for credit. Mathematics 3A-B-C and Mathematics 5A-B; Computer Science 10, 20, 30, 40, 50, and 60; Probability and Statistics 120A. A science sequence selected from Chemistry 1A-AL-B-BL-C-CL or Physics 1, 2, 3, 3L or Physics 6A-AL-B-BL-C-CL. Two additional science courses selected from an approved list available in the computer science office. The science sequence and the two additional science courses are excluded from the pre-major grade-point average requirement and need not be completed prior to advancement to the full major.

Upon completion of the preparation for the major with a satisfactory grade-point average, the pre-major student should submit a change of major petition, available in the office of the Department of Computer Science. At that time, the student must declare an intent to pursue either a B.A. degree through the College of Letters and Science or a B.S. degree through the College of Engineering.

Upper-division major. Forty-eight upper-division units, including the following, are required: Computer Science 110A or 110B, 130A-B, 136, 154, 162, 170, 186; Electrical and Computer Engineering 152A; Probability and Statistics 120B. At least 7 units of upper-division major field electives must be completed; prior approval by the student's advisor is required*.

Courses required for the major or pre-major, lower- or upper-division, inside or outside of the Department of Computer Science, cannot be taken with the passed/not passed grading option. They must be taken for letter grades.

**All computer science majors are strongly encouraged to take Engineering 101. This course will not count as part of the pre-major or major, but it will apply to the upper-division Letters and Science elective unit requirement.*

Bachelor of Science—Computer Engineering

For information regarding this major, please refer to Computer Engineering in the Electrical and Computer Engineering section. This major is jointly offered by the Departments of Computer Science and Electrical and Computer Engineering.

Dance

**Division of Dance,
Division of Humanities and Fine Arts,
Snidecor Hall 2645;
Telephone (805) 893-3241**
E-mail: romine@humanitas.ucsb.edu
Web site: www.dramadance.ucsb.edu
Director: Jerry Pearson

Faculty

John V. Chapman, Ph.D., C.N.A.A., Associate Professor (dance history, criticism)

Nancy Colahan, Lecturer (modern technique)

Valerie Huston, B.F.A., University of Utah, Lecturer (ballet)

Delila Moseley, M.A., UC Santa Barbara, Lecturer (modern technique, jazz, ballet)

Jerry Pearson, B.S., University of Minnesota, Professor (modern technique, choreography, Artistic Director of Santa Barbara Dance Theatre)

Christopher Pilafian, The Juilliard School, Lecturer (modern technique, improvisation, choreography, repertory)

Frank W. D. Ries, Ph.D., Indiana University, M.A., Cambridge University, Professor (history, criticism, musical theatre forms)

Tonia Shimin, Royal Academy, Professor (modern technique, improvisation, production)

Emeriti Faculty

Alice Condodina, B.A., Temple University, The Juilliard School, Professor Emerita (modern technique, choreography, repertory)

Rona Sande, M.Ed., College of William and Mary, The Juilliard School, Professor Emerita (modern technique, choreography, dance theory)

(In addition to the regular faculty, the Division of Dance offers a program of internationally renowned guest artists. Recent guests have included Peggy Baker, Tandy Beal, Bella Lewitzky, Donald McKayle, Jennifer Muller, Risa Steinberg, Clay Taliaferro, Doug Varone, and Dan Wagoner, among others.)

The Division of Dance offers two degree programs, the B.A. and the B.F.A. Although the curriculum for both emphasizes performance and choreography, the bachelor of fine arts degree is highly structured and specifically designed for those students who wish to pursue a professional career in dance or gain entrance into an M.F.A. or M.A. program. The bachelor of arts option is a broadly based liberal arts degree that allows more time for students to take courses in areas other than dance, preparing them for further study in such dance career areas as therapy, administration, history, or education. Graduates from either of the degree programs can teach in a variety of situations. Students with a bachelor's degree in dance who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Students who wish to major in dance must pass the department audition. Auditions are

held on campus in February prior to university admission. For students who are some distance from the Santa Barbara campus, there is an option to audition by videotape. Further details are available from the department. Auditions are offered again during fall registration week for those unable to attend the February audition date. Admission into the university is no guarantee of admission into the dance major unless an audition has been passed. Likewise, acceptance at the dance audition does not guarantee admission to the university. Audition details may be obtained by writing directly to the Division of Dance.

As a dance major, a student must take a minimum of eight technique classes per week (modern and ballet). For graduation, the B.A. student must fulfill the minimum proficiency requirement in technique by passing Dance 47F (Ballet II) and Dance 156C (Modern Dance III). The minimum proficiency requirement for the B.F.A. student is Dance 147C (Ballet III) and Dance 156F (Modern Dance IV). For seniors in the B.A. degree program, an option is available which allows a reduced course load in technique once the minimum proficiency is met.

Each student is assigned a faculty advisor, and new and continuing students are strongly urged to meet with their advisor at least once a year, preferably once each quarter. Students also receive quarterly evaluation on their progress in dance courses.

Santa Barbara Dance Theatre is a professional dance company in residence at UCSB. The company of six dancers performs locally and statewide, providing an important resource for the department as well as a valuable outreach program to the community. A select number of advanced students are chosen for the UCSB Dance Company. This student company performs both on and off campus in Santa Barbara, tours regionally, and has been invited to Mexico twice to perform. In addition, the company participates in the American College Dance Festival Association, traveling to other states throughout the U.S. to perform. The UCSB Dance Company participates in 20-25 performances each year, giving its members a chance to experience life on tour with a dance company, preparing them for the professional world.

Scholarships and Awards

The Matthew Alan Plaskett Memorial Scholarship is offered biannually to an incoming male who wishes to be a dance major or a double major in dramatic art and dance with an interest in musical theatre. The Patricia Sparrow Memorial Fund is awarded to dance students to further their education at summer workshops. The annual Sherrill C. Corwin-Metropolitan Theatres Corporation Writing Awards offer prizes for outstanding choreography by UCSB students. The Condodina Award is presented annually for outstanding performance. Further information about these scholarships and awards as well as audition material and a brochure describing course offerings, major requirements, and faculty background information is available from the undergraduate advisor.

Senior Honors Program

Candidates who are nominated by the faculty, and who elect to complete their degrees with departmental honors, must submit a proposal for an undergraduate thesis project to be completed during the senior year. The project must represent a significant advanced undertaking in an area of either academic research or creative endeavor and must be approved by a member of the faculty who will serve as project supervisor. The student will receive 4 to 8 units of academic credit in the Dance 193H series. The project will be evaluated by a committee including the supervisor and two additional members of the faculty. Distinction in the Major will be awarded at the time of graduation to those students whose projects are declared acceptable.

Undergraduate Program

Bachelor of Fine Arts—Dance

Preparation for the major. Dance 36, 45, 47A-B-C-D-E-F, 50, 51, 56A-B-C-D-E-F, 58; Dramatic Art 5 or 12; 19D, 23D, 2 units of 29 series or 49; Music 15; MCDB 25 and 25L or EEMB 25 and 25L.

Upper-division major. *Note: Entry into the B.F.A. program is by recommendation of dance faculty for currently enrolled students, and by special audition at the beginning of the junior year for transfer students. Completion of the program depends upon successful progress and recommendation of the dance faculty. Assessment of a B.F.A. student's progress is made on a quarterly basis, and provision is made for students who appear unable to complete the B.F.A. program requirements to graduate with the less specialized B.A. degree providing they maintain the standards for that degree.* Sixty-eight upper-division units are required, as follows: Dance 139, one course from 145A-B-M-W or 157; 147A-B-C, 149 (4 units), 151A-B-C, 156A-B-C-D-E-F, 191, as well as 17-18 additional units selected from Dance 145A*, 145B*, 145M*, 145W*, 146, 147PA-PB-PC, 149, 151D, 151E, 157*, 158, 160, 161A, 171, 172, 190, 193H, 194, 199.

* *if not chosen above.*

Bachelor of Arts—Dance

Preparation for the major. Dance 36, 45, 47A-B-C-D-E-F, 50, 51, 56A-B-C-D-E-F, 58; Dramatic Art 19D, 23D, 2 units of 29 series or 49; Music 15; MCDB 25 and 25L or EEMB 25 and 25L.

Upper-division major. *Note: Technical ability and theoretical knowledge must be demonstrated to the satisfaction of the dance faculty before entrance to upper-division study. Students should contact the dance faculty for program planning advice, in order to insure the best possible sequence of study.* Thirty-six upper-division units are required, as follows: Dance 139, one course from: 145A-B-M-W or 157, 149 (1 unit), 151A-B-C, 156A-B-C, as well as 9-10 additional units selected from Dance 145A*-B*-M*-W*, 146, 147A-B-C, 147PA-PB-PC, 149, 151D-E, 156D-E-F, 157*, 158, 160, 161A, 171, 172, 190, 193H, 194, 199.

* *if not chosen above.*

Dance Courses

LOWER DIVISION

35. History and Appreciation of World Dance
(4) CHAPMAN
Introduction to dance as cultural and social expression in a variety of cultures. Forms covered include Flamenco, Ballet, African, Mexican, and East Indian.

36. History of Modern Dance
(4) STAFF
Historical development of modern dance in the United States and Europe in the twentieth century. Emphasis on visionary, feminist, and radical aspects of the form.

39. Orientation to Dance
(1-2) STAFF
Selected topics of relevance for the dance professional. Career opportunities, current issues and trends, nutrition, dance injury prevention, bibliography, art agency resources, etc.

40. Summer Ballet
(2-4) STAFF
May be repeated for credit to a maximum of 12 units.
Fundamentals of ballet techniques. (SS)

41. Summer Modern Dance
(2-4) STAFF
May be repeated for credit to a maximum of 12 units.
Fundamentals of modern dance technique. (SS)

42A-B-C. Beginning Ballet
(1-1-1) STAFF
May be repeated for credit to a maximum of 2 units each.
Introduction to basic elements of ballet.

42D-E-F. Beginning Ballet
(2-2-2) STAFF
May be repeated for credit to a maximum of 4 units each.
Recommended preparation: Dance 42C.
Further study of basic elements of ballet.

44A-B-C. Beginning Modern Dance
(1-1-1) STAFF
May be repeated for credit to a maximum of 2 units each.
Introduction to basic elements of modern dance.

44D-E-F. Beginning Modern Dance
(2-2-2) STAFF
May be repeated for credit to a maximum of 4 units each.
Recommended preparation: Dance 44C.
Further study of basic elements of modern dance.

45. History and Appreciation of Dance
(4) RIES
Introduction to dance as an art form. A study of the historical periods of dance in close relationship to the other forms of cultural expression.

47A-B-C. Ballet I
(2-4, 2-4, 2-4) HUSTON, MOSELEY
Prerequisite: audition by dance faculty.
May be repeated for credit to a maximum of 8 units each by dance, dramatic art, and theatre majors only.
Analysis and exploration of technical and expressive elements of the ballet. For Dance majors. (F,W,S)

47D-E-F. Ballet II
(2-4, 2-4, 2-4) HUSTON
Prerequisite: Dance 47C.
May be repeated for credit to a maximum of 8 units each by dance, dramatic art, and theatre majors only.
Further analysis and exploration of technical and expressive elements of ballet. For Dance majors. (F,W,S)

50. Fundamentals of Choreography
(3) STAFF
Prerequisite: Dance 51.
A study of the basic elements pertaining to the craft of choreography. Emphasis on exploration of movement variation, breath rhythm, the development of dance phrases, and the use of stage space. For Dance majors.

51. Improvisation
(3) STAFF
Prerequisite: Dance 56C.
May be repeated once for credit if taken with a different instructor.
The understanding and development of aesthetic awareness in movement through the use of body tensions and energy. For Dance majors.

56A-B-C. Modern Dance I
(2-4, 2-4, 2-4) STAFF
Prerequisite: audition by dance faculty.
May be repeated for credit to a maximum of 8 units each by dance, dramatic art, and theatre majors only.
Analysis and exploration of the technical aspects of movement as an expressive medium. For Dance majors.

56D-E-F. Modern Dance II
(2-4, 2-4, 2-4) STAFF
Prerequisite: Dance 56C.
May be repeated for credit to a maximum of 8 units each by dance, dramatic art, and theatre majors only.
Analysis and exploration of the technical aspects of movement as an expressive medium at the intermediate level. For Dance majors. (F,W,S)

56G. Floor Barre
(1) SHIMIN
May be repeated for credit to a maximum of 4 units.
Analysis and exploration of alignment for the dancer with emphasis on correct placement for the individual.

58. Pedagogy I
(3) STAFF
Prerequisites: Dance 47A and 56A.
Theory, principles, and methods of teaching dance, including study of movement concepts, communication skills and class dynamics. Includes practical experience in leading groups through movement sequences.

60. Summer Jazz Dance
(2-4) STAFF
May be repeated for credit to a maximum of 12 units.
Fundamentals of jazz technique. (SS)

61A-B-C. Introduction to Jazz Dance
(2-2-2) MOSELEY
Courses should be taken in sequence.
Recommended preparation: Dance 47C or 56C.
Analysis and exploration of the technical and expressive elements of jazz dance.

61S. Jazz
(2-4) STAFF
May be repeated for credit to a maximum of 12 units.
Analysis and exploration of the technical and expressive elements of jazz technique.

70. Music for Dance: Rhythm
(3) STAFF
Not open for credit to students who have completed Dance 43.
The study of principles of rhythm related to dance, including historical and cultural orientations. Practical instruction in notation, rhythmic movement, and percussion instruments.

94. Group Studies for Lower-Division Dance Students
(1-4) STAFF
Prerequisite: lower-division standing.
May be repeated for credit to a maximum of 16 units, but only 8 units may be applied toward the major.
Group studies in selected areas of emphasis.

UPPER DIVISION

139. Senior Colloquium
(1) STAFF
Prerequisite: senior standing.
Selected topics of relevance for the dance professional. Career opportunities, current issues and trends, art agency resources, etc.

145A. Studies in Dance History to 1789
(4) CHAPMAN, RIES
Prerequisite: upper-division standing.
Recommended preparation: Dance 36 or 45.
The study of dance as a reflection of cultural, social, and political history and its development as a theatrical art form from primitive cultures until the eve of the French Revolution.

145B. Studies in Dance History: Ballet
(4) CHAPMAN, RIES
Prerequisite: upper-division standing.
Recommended preparation: Dance 36 or 45.
The historical evolution of ballet from the French Revolution to the present day. Topics will include the romantic and Russian ballets, the Age of Diaghilev, and the development of ballet companies in America and Europe.

145C. History and Criticism of Modern Dance
(4) CHAPMAN, RIES
Prerequisite: upper-division standing.
Recommended preparation: Dance 36 or 45.
The historical evolution of modern dance in the twentieth century, with emphasis on the United States. Analysis of important critical and interpretive writers on dance with practical application in viewing, reviewing, and criticism.

145M. Studies in Dance History: American Musical Theater
(4) RIES
Prerequisite: upper-division standing.
Recommended preparation: Dance 45.
A study of the evolution of dance in the American musical theatre from the mid-nineteenth century to the present day. Analysis of dance styles on both stage and screen and its reflection of contemporary culture.

145W. Women in Dance
(4) CHAPMAN
Prerequisite: upper-division standing.
Recommended preparation: Dance 36 or 45.
Examination of the lives of women dancers from a feminist perspective. The course focuses on modern dance and ballet during the ninteenth and twentieth centuries.

146. Multicultural Dance
(4) CHAPMAN
Recommended preparation: Dance 35.
An examination of the dance traditions of diverse cultures through lectures and participation in studio activities.

147A-B-C. Ballet III
(2-4, 2-4, 2-4) HUSTON
Prerequisite: Dance 47F.
May be repeated for credit to a maximum of 16 units each, but only 8 units of each may be applied toward the major.
Advanced analysis and exploration of the technical and expressive elements of ballet. For Dance majors. (F,W,S)

147PA-PB-PC. Ballet: Pointe
(1-2, 1-2, 1-2) HUSTON
Prerequisite: Dance 47C.
May be repeated for credit to a maximum of 10 units each, but only 6 units of each may be applied toward the major.
Basic pointe work, including barre and center practice. For Dance majors.

149. Dance Workshop
(1-4) STAFF
Prerequisite: audition by dance faculty.
May be repeated for credit to a maximum of 12 units, but only 6 units will count toward major.
Projects in performance, production, choreography, and directing. (F,W,S)

150. Historical Dance Forms
(3) RIES
Recommended preparation: Dance 42A or 42B or 42C.
Analysis of period styles in dance as reflected in theatrical practice from the Pre-Classic through the nineteenth century. Course will include practice in the execution of the particular dance forms studied.

151A-B-C. Choreography
(3-3-3) STAFF
Prerequisites: Dance 50 and 51 and Dramtic Art 19D.
Analysis of the elements of choreographic form; styles and trends with experience in development of dance studies; theory and technique of advanced group choreography. (F,W,S)

151D. Environmental Choreography
(3) SHIMIN
Prerequisite: Dance 151C.
A process-oriented study of scoring, designing, and performing dance works in natural landscapes.

151E. Choreography for the Theatre
(2) RIES
Recommended preparation: Dance 145M.
The study of important dance routines of the American Musical Theatre from 1789 to present, with opportunity for performance.

156A-B-C. Modern Dance III
(2-4, 2-4, 2-4) STAFF
Prerequisite: Dance 56F.
May be repeated for credit to a maximum of 8 units each by dance, dramatic art, and theatre majors only.
Advanced analysis and exploration of the technical aspects of dance as an expressive medium. For Dance majors. (F,W,S)

156D-E-F. Modern Dance IV
(2-4, 2-4, 2-4) STAFF
Prerequisite: Dance 156C.
May be repeated for credit to a maximum of 8 units each.
Further analysis and exploration of the technical aspects of dance as an expressive medium. For Dance majors.(F,W,S)

157. Criticism and Analysis
(3) CHAPMAN
Advanced analysis of choreographic works with practical application in viewing, reviewing, and criticism.

158. Pedagogy II
(2-3) STAFF
Prerequisites: Dance 56F and 58.
Further analysis of the theory and practice of teaching dance, including function and esthetics in the development of movement vocabulary, application of anatomy, kinetics and musicality. Includes practical experience teaching dance classes.

160. Dance Repertory
(2) STAFF
Prerequisite: Dance 56F.
May be repeated for up to 12 units of credit.
The study and performance of major choreographic works.

161A. Jazz Dance
(2) MOSELEY
Recommended preparation: Dance 61B.
Jazz as a style and technique. Fundamentals of jazz as an art form for advanced dancers.

161B. Musical Comedy Dance
(2) RIES
Recommended preparation: Dance 61A or 61B.
Dance sequences from musicals, utilizing theatrical dance styles from the 1920's to the present.

171. Music for Dance: Form and Tonality
(3) STAFF
Prerequisite: Dance 70.
Not open for credit to students who have completed Dance 154.
Overview of form, structure, and tonality in Western music, including global and historical influences. Examination of styles of music composi-

tion and performance, related to dance and choreography.

172. Music for Dance: Resources and Materials
(3) STAFF
Prerequisite: Dance 171.
Not open for credit to students who have completed Dance 159.
In-depth examination of music terminology, methodology and composition for choreographers and dancers. Musical scoring and analysis related to choreographic works. Collaborative process. Exploration of historical, multi-cultural and contemporary music resources for choreographers.

186. Dance Production
(1-4) STAFF
Prerequisites: Dance 151C.
May be repeated for credit to a maximum of 8 units.
Exploration of the process of collaboration between dance choreographers and theatre designers in the development of designs for dance productions. Final project will be a public performance of the choreographers' and designers' work.

189. Elements of Performing
(1-3) STAFF
Prerequisites: Dance 56F; upper-division standing.
May be repeated for credit up to 6 units.
The study of stage technique for the development of alert, responsive, and dynamic performers. Individual coaching in the elements of performing such as projection, timing, and pre-performance preparation.

190. UCSB Dance Company
(2-4) MOSELEY
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 16 units, but only 8 units may be applied toward the major.
Selected students work as dancers in the UCSB Dance Company, studying and analyzing choreography and performance. The company performs locally and/or on tour. Students experience the integral workings of a company.

191. Senior Project
(3) STAFF
Prerequisite: Dance 151C.
Choreographic or performance project produced as the culminating presentation for the B.F.A. degree. Course includes detailed documentation of the procedure followed during the creation of the final project.

193H. Senior Honors Project
(4) STAFF
Prerequisite: senior standing.
Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination.
This course is for students who will complete their projects in one quarter. A final grade will be assigned upon completion.
Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major. (F,W,S)

193HA. Senior Honors Project
(2-4) STAFF
Prerequisite: senior standing.
Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination.
Four to 8 units required in honors sequence; minimum of 2 units per quarter. This course is the first in the sequence for students who will complete their projects in either two or three quarters. An "in progress" grade will be assigned; students may then enroll in either Dance 193HB or 193HC.
Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

193HB. Senior Honors Project
(2-4) STAFF
Prerequisites: Dance 193HA; senior standing.
Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination.
Four to 8 units required in the honors sequence; a minimum of 2 units per quarter. This course is the second in the sequence for students who will complete their projects in three quarters. An "in progress" grade will be assigned; students will then enroll in Dance 193HC.
Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

193HC. Senior Honors Project
(2-4) STAFF
Prerequisites: Dance 193HA or 193HB; senior standing.
Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination.
Four to 8 units required in honors sequence; minimum of 2 units per quarter. This course is the final in the two or three quarter sequence. A final grade will be assigned upon completion.
Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

194. Group Studies in Dance
(1-4) STAFF
Prerequisite: upper-division standing.
May be repeated for credit to a maximum of 8 units.
Group projects in selected areas of emphasis.

199. Independent Study in Dance
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in dance.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Projects in choreography or dance research. (F,W,S)

199RA. Independent Research Assistance in Dance
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in dance; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Supervised assistance in faculty research project.

Dramatic Art

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rendon@humanitas.ucsb.edu
Web site: www.dramadance.ucsb.edu
Chair: William Davies King
Vice Chair: Jerry Pearson

Faculty

Irwin Appel, Diploma (M.F.A. equivalent), The Juilliard School, Drama Division, Assistant Professor (acting, directing)

Catherine Cole, Ph.D., Northwestern University, Assistant Professor (contemporary theory, African theatre)

James Donlon, B.A., Humboldt State University, Lecturer (movement)

Robert G. Egan, Ph.D., Stanford University, Professor (dramatic literature, directing)

Dianne Holly, M.A., San Diego State University, Lecturer with Security of Employment (costume design)

Jay Jagim, M.F.A., University of Connecticut, Associate Professor (scenic design)

Sue Kennedy, M.F. A., San Diego State University, Lecturer (costume construction, make-up)

William Davies King, D.F.A., Yale School of Drama, Professor (American drama and theatre history)

Peter Lackner, Ph.D., Institute for Theatre Studies, Freie Universität, Berlin, Professor (directing, acting)

Michael Morgan, B.F.A., New York University School of Arts, Lecturer with Security of Employment (voice)

Judith Olauson, Ph.D., University of Utah, Lecturer with Security of Employment (acting, directing)

Robert Potter, Ph.D., Claremont Graduate School, Professor (playwriting, dramatic literature)

Vickie Scott, M.F.A., UC Los Angeles, Lecturer with Potential Security of Employment (lighting, design)

Thomas Whitaker, M.F.A., Carnegie Mellon University, Associate Professor (acting, directing)

Simon Williams, Ph.D., University of East Anglia, Professor (European theatre history, dramatic literature)

Emeriti Faculty

Stanley L. Glenn, Ph.D., Stanford University, Professor Emeritus (acting, directing)

Theodore W. Hatlen, Ph.D., Stanford University, Professor Emeritus

Peter Mark, M.S., The Juilliard School, Professor Emeritus (music theatre)

William R. Reardon, Ph.D., Stanford University, Professor Emeritus (dramatic literature, theory)

Bert States, D.F.A., Yale University, Professor Emeritus (dramatic literature, theory)

Leland K. Strasburg, M.F.A., University of Utah, Senior Lecturer Emeritus (scenic and lighting design)

The Department of Dramatic Art offers two undergraduate and two graduate degrees: a bachelor of arts in dramatic art, a bachelor of fine arts in theatre, a master of arts in dramatic art, and a doctor of philosophy in dramatic art. The bachelor of fine arts degree is designed to prepare professionally oriented students for a career in acting. The bachelor of arts is a more broadly based degree, with a liberal arts orientation, which allows students wider curricular choices. Both degrees provide a strong background in theatre arts and dramatic literature. The M.A. program is designed to afford a strong foundation for work in educational or professional theatre or for further graduate study. The Ph.D. is an intensive program concentrating in literary, critical, and historical research, designed to prepare students for careers in university teaching.

Senior Honors Program

Candidates who are nominated by the faculty and who elect to complete their degrees with departmental honors must submit a proposal for an undergraduate thesis project to be completed during the senior year. The thesis must represent a significant advanced undertaking in an area of either academic research or creative endeavor. The student will receive 4 to 8 units of academic credit in the Dramatic Art 193H series. The project must be approved by a member of the faculty who will work closely with the student as project supervisor, and be evaluated by a committee including the supervisor and two additional members of the faculty. Distinction in the Major will be awarded at the time of graduation to those students whose projects are declared acceptable.

Undergraduate Program

Students in the bachelor of arts program may concentrate in one or a combination of the following areas: directing, dramatic literature, playwriting, and theatre design and technology; or they may select a pre-credential program or an individualized program with the consultation of an advisor. Students in the bachelor of fine arts program will complete an emphasis in acting.

The major provides ample opportunities for participation in play production and workshop activities in three campus theatres. Auditions for departmental productions will usually be held in the first week of each quarter. Audition material and information are available in the dramatic art production office at the end of each quarter.

Initial counseling for undergraduates is given in the department office by the undergraduate advisor, who will assign each student a faculty advisor; further counseling is provided by both the undergraduate advisor and faculty advisor. Registration for many dramatic art courses requires department approval.

Core Courses

To complete any undergraduate program in the Department of Dramatic Art, the following core courses are required:

Preparation for the major. Dramatic Art 1 (fall quarter freshman year), 5, 29A-B-C-D, 49*.

Upper-division major. Dramatic Art 149*; one course from 160A-B-C, 162; one course from 155A-B, 160D-E-F, 161A-B; three courses from 106, 156, 163, 166, or additional courses from those listed above (155A-B, 160A-B-C-D-E-F, 161A-B, and 162), or one from Asian American 125, Chinese 137, or Japanese 149.

** A minimum of 4 units from the 49/149 series is required. (A maximum of 25 units of the 49/149 series will be accepted for graduation.)*

Bachelor of Arts—Dramatic Art

The aim of the department is to provide a comprehensive undergraduate education in dramatic art based on core requirements, which include practical experience in the theatre arts (acting, theatre technology, and production) and coursework in dramatic theory and literature. An undergraduate major in dramatic art may lead to specialized creative work in the profession, to graduate work in preparation for teaching and research, or to other careers within or beyond the arts and entertainment industry.

For the B.A. in dramatic art, students must complete a minimum of 36 upper-division units in dramatic art which includes the core requirements. In selecting these courses, students may focus on any one area or on a combination of the areas outlined below. After an initial interview with the departmental undergraduate advisor, students should plan their coursework in consultation with a faculty advisor.

Directing

The directing concentration is the most structured and specialized area of study within the B.A. program, and is intended to provide serious experience of the director's function in today's theatre. It offers a sound preparation for an M.F.A. in directing, or for a professional career in the field, which may include directing on various educational levels, including secondary school and college, as well as community and regional theatre.

The directing concentration requires Dramatic Art 14 and 19 in addition to B.A. core requirements. Before enrolling in Dramatic Art 152, the student must have completed all lower-division requirements, including 29A-B-C-D. (Transfer students who enroll at the junior level may, at the discretion of the department, make up some of these prerequisites while they take the 153 series.) Required upper-division courses are: 152 , 153B, and 153C (must be taken during the junior year); 153D (a senior project in directing); 195; 8 units from the following: 26, 104A-B-C, 106, 133, 161A-B. Directing students are advised to elect Art History 1 and Music 15 to satisfy General Education Program requirements in the fine arts area.

Dramatic Literature, Theory, and Theatre History

A distinctive feature of the UCSB Department of Dramatic Art is its wide range of offerings in dramatic literature, theory, and theatre history (see course descriptions of Dramatic Art 106, 155A-B, 156, 160A-B-C-D-E-F, 161A-B, 162, 163, and 166). These courses may be supplemented with dramatic literature courses, in the original languages and in translation, in numerous humanities departments at UCSB.

Playwriting

The playwriting program is based on a year-long course, Dramatic Art 104A-B-C, and includes public readings, visiting lecturers, the yearly Original Scripts Festival, and periodic departmental productions of original scripts. Enrollment in Dramatic Art 104A is open to all students without prerequisites; continuation in 104B-C requires permission of the instructor. The latter courses may be repeated for credit, and further work in this area might include additional courses in dramatic literature, creative writing, and theatre arts, and perhaps an internship as dramaturge on a departmental production. Coursework in screenwriting is available through the Film Studies Program.

The annual Sherrill C. Corwin-Metropolitan Theatres Corporation Writing Awards offer prizes for original student work in playwriting, screenwriting, film making, and choreography.

Theatre Design and Production

The theatre design and production program is a specialization for students who want intensive and practical training in these areas of theatre. Objectives include preparation of students as theatre artists for work in professional theatre or entry into an M.F.A. program. Students who wish to enter the program should schedule an interview with a faculty designer where they will discuss requirements and outline an individualized course of study.

In addition to core courses, students in this program will select beginning and advanced courses in scenic, lighting, and costume design. Students will supplement these courses with related electives concentrating in technical areas of production and design, including drawing, graphics, rendering, stage painting, stage crafts, construction, history, and stage management.

Bachelor of Fine Arts—Theatre—Acting Emphasis

The acting emphasis is a highly selective three-year program which students enter in their sophomore year. An audition is required at the end of the freshman year or the beginning of the sophomore year. The program is geared toward preparation for entry into professional conservatory programs, M.F.A. programs, or professional theatres. A more comprehensive description of the philosophy and policies of the B.F.A. acting emphasis is available from the department. Continuation in the program is determined by the acting faculty, using such criteria as clear demonstration of potential talent and professional commitment to the field. Passage to advanced acting uses similar criteria, but more stringent judgment is applied. Transfer students who pass the audition will enter the B.F.A. at the first year of the training program, regardless of class standing with the university. All interested students may request information from the department.

To complete the program for the B.F.A. in

acting, the following courses are required, in addition to the core courses:

Lower-division: Dramatic Art 10A-B-C (must be taken concurrently with 15A-B-C), 11A-B-C (concurrently with 15A-B-C), 15A-B-C, 26, two courses from Dance 42A-B-C-D-E-F, 44A-B-C-D-E-F; Physical Activities 1-18D or 1-13A.

Upper-division: A total of 70-74 upper-division dramatic art units is required inclusive of core and emphasis courses: Dramatic Art 110A-B-C (concurrently with 151A-B-C), 110D, 111A-B-C (concurrently with 151A-B-C), 112, 149 (6 additional units beyond the core requirements), and 151A-B-C-D-F-G-J. Students may not enter the 151 series until they have completed Dramatic Art 1 and 162.

Graduate Program

Admission

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB."

Candidates for admission to the Ph.D. program must hold a M.A. or M.F.A. degree from UC Santa Barbara or another institution.

Master of Arts—Dramatic Art

The M.A. program is designed to afford a strong foundation for work in educational or professional theatre or for further graduate study.

Degree Requirements

Forty-eight units are required for the M.A. degree; at least 12 of these must be taken in graduate seminars (Dramatic Art 210-252). In addition, 16 units must be related to practical study of the theatre; 8 of these units must be from the 260-263 sequence. Degree candidates must complete a satisfactory thesis project and pass a two-hour oral examination upon completion of the work. A minimum of 4 and a maximum of 8 units should be committed to the thesis project. M.A. students are expected to take the introduction to bibliography (Dramatic Art 200) upon entry to the program and to enroll regularly in the graduate colloquia (Dramatic Art 201, 202). Consult the department for details on courses taken for the master's degree. When graduate students enroll in upper-division undergraduate courses to fulfill departmental and university requirements, they are normally expected to achieve a higher standard of work than undergraduates enrolled in the same courses.

Masters candidates who have clearly revealed their scholarly and creative ability may petition the department for admission to the Ph.D. program. The deadline for petitions is the same as the deadline for outside application to the Ph.D. program.

Playwriting Program. With the approval of the program director, graduate students may undertake a playwriting project in partial fulfillment of M.A. degree requirements. Interested M.A. applicants should submit a sample of their work to the playwriting program director.

M.A./Ph.D. Track. A limited number of applicants who have only a B.A. at the time of application and who show unusual promise for doctoral study may be admitted to the combined M.A./Ph.D. program. During the first two years, they are expected to fulfill all requirements (coursework and thesis) for the M.A. program. They must also pass a written examination in the middle of the second year, at which point they are admitted to the doctoral program. Students who successfully pursue this track need to complete only one further year of coursework before taking the comprehensive examinations and writing the dissertation. All other degree requirements are as listed in the separate degree program sections.

Doctor of Philosophy—Dramatic Art

The Ph.D. program, an intensive program concentrating on literary, critical, and historical research, is designed to prepare students for careers in university teaching.

Degree Requirements

A heavy sequence of courses in dramatic literature, theatre history, theory, and criticism is taken over a period of two years. All doctoral students are expected to take two seminars a quarter, or the equivalent, in departmental seminars and lectures, or in cognate offerings in other departments. In lieu of a course in research and methodology, all doctoral students must complete exercises in the techniques of research that will be included in the regular seminars in which they participate. All doctoral students must enroll in the graduate colloquia, Dramatic Art 201 and 202, throughout their time in the department. Only students in their first year in the doctoral program must enroll in Dramatic Art 200. Doctoral students who have already completed an M.A. in dramatic art at UCSB need only take one additional year of seminars.

All doctoral students must establish reading knowledge of at least one foreign language prior to advancement to candidacy. A grade of Pass or better in an upper-division course taught in a foreign language or a B or better in an intermediate language training course will suffice to establish basic competency. Students can also meet this requirement by a translation test, using a dictionary. The latter option must be exercised at least four months prior to qualifying examinations. For those writing a dissertation on a non-English subject, demonstrated oral and written proficiency in the relevant languages is required. At the start of the third year, the candidate must pass written examinations in dramatic literature, theatre history and practice, and theory and criticism, as well as the oral qualifying examination administered by a doctoral committee. Upon successful completion of these examinations, the student will be recommended for advancement to candidacy.

The third and fourth years will be spent researching and writing the dissertation. Approximately 36 units in the third year will be devoted to dissertation work. Students whose dissertations are not completed by the end of the fourth year will be subject to review by the graduate faculty of the department.

Doctoral students in dramatic art are required to serve as teaching assistants for six quarters.

Dramatic Art Courses

LOWER DIVISION

1. Introduction to Dramatic Art
(4) EGAN

Introduction to the study of dramatic art. Focus on the analysis of the dramatic text and the integration of the various theatre arts into the theatrical event. Course is also designed to orient beginning major to structure and various functions of the department.

5. Introduction to Acting
(3) STAFF

Introduction for majors and nonmajors to the multiple problems of the actor's art and craft. (F,W,S)

6S. Acting Workshop
(2-4) STAFF

Laboratory for voice, movement, and acting. (SS)

10A-B-C. Movement for the Stage
(2-2-2) DONLON

Prerequisites: Dramatic Art 5; concurent enrollment in DA 15A (for DA 10A); audition: concurent enrollment in DA 15B (for DA 10B); audition: concurent enrollment in DA 15C (for DA 10C); audition.

May be repeated once for credit with recommendation of instructor.

Intense physical training designed to produce a neutral, dynamic, and expressive bodily instrument. (F,W,S)

11A-B-C. Voice Laboratory
(2-2-2) MORGAN

Prerequisites: Dramatic Art 5; concurent enrollment in DA 15A (for DA 11A); audition: concurent enrollment in DA 15B (for DA 11B); audition: concurent enrollment in DA 15C (for DA 11C); audition.

May be repeated once for credit with recommendation of instructor.

A fundamental approach to voice for the actor with emphasis on vocal production, articulation, and quality; plus physical relaxation techniques. (F,W,S)

13. Musical Theatre Workshop
(2) OLAUSON

Prerequisite: audition.

Singing, movement, and dance through the medium of music theatre, culminating in a showcase performance.

14. Acting Workshop
(3) STAFF

Prerequisites: Dramatic Art 5; not open to freshmen. Designed for nonspecialists in drama.

Exploration, performances, and criticism of scenes from a broad range of dramatic scripts with focus on the actor's perspective. Practical skills are taught to make the physical exploration of the text a valid exercise.

15A-B-C. Fundamentals of Acting
(4-4-4) STAFF

Prerequisites: Dramatic Art 5; concurent enrollment in DA 10A and 11A (for DA 15A); audition: concurent enrollment in DA 10B and 11B (for DA 15B); audition: concurent enrollment in DA 10C and 11C (for DA 15C); audition.

May be repeated once for credit with recommendation of instructor.

Development of the ntermediate actor's foundational work in improvisation, technique, scene study, textual analysis, and characterization while exploring creative capacity.

16. Fundamentals of Voice and Speech
(3) MORGAN

Prerequisite: not open to theatre majors.

A basic approach for the actor in freeing the voice, dismantling tension, centering sound, releasing breath, developing range and expressive power; with the speech component of utilizing phonetics towards learning General American English as preparation for stage dialects and acting Shakespeare.

17. Fundamentals of Movement for Theatre
(3) DONLON

Prerequisite: not open to theatre majors.

The fundamental exploration of actor movement training for non-B.F.A. actors, directors. and dancers.

19. Design Fundamentals for Theatre
(4) JAGIM

Lectures, demonstrations, and projects to give the non-specialist and beginning specialist an understanding of the stage design process. Study of elements, principles, terminology, and basic techniques; exploration of communicative and collaborative process. Concentration in scenic, costume, and lighting practices.

19D. Design Fundamentals for Dance
(4) HOLLY, SCOTT

Prerequisite: open to dance majors only.

Lectures, demonstrations, and projects to provide an understanding of the stage design process for dance. Study of the elements, principles, terminology, and basic techniques. Exploration of the communicative and collaborative process between designer and choreographer. Concentration in scenic, costume, and lighting practices.

22. Scenic Design
(4) JAGIM

Prerequisites: Dramatic Art 1 and 19.

Projects in the interpretation of plays through scenic elements with concentration on the design process and the dramatic use of space. Drafting projects including floor plans, elevations, and basic perspective drawing.

23. Stage Lighting Design
(4) SCOTT

Prerequisites: Dramatic Art 1 and 19.

Lecture-demonstration in instrumentation, color in light, control equipment and basic lighting theories. Technical drawing including light plots, scheduling and organization for lighting design. Some practical application through laboratory and studio exercise.

23D. Dance Lighting Design
(2) SCOTT

Prerequisite: Dramatic Art 19D.

Lecture-demonstration in instrumentation, color in light, control equipment, and basic lighting theories. Practical application through laboratory assignments and studio productions.

25. Costume Design
(4) HOLLY

Prerequisites: Dramatic Art 1 and 19.

Exploration of the basic elements and principles of theatre costume design. Projects in the interpretation of plays through costume elements with concentration on the design process. Emphasis on figure drawing.

26. Stage Makeup
(2) KENNEDY

The theory, history, and practical application of stage makeup including character, age, period, and special effects techniques.

27. Theatre Graphics
(1-4) JAGIM, HOLLY

May be repeated for credit to a maximum of 9 units.

Drawing for the theatre. May include orthographic and isometric, light and shade, perspective and line drawing, and rendering technique. Subject varies by quarter.

28. Computing For Theatre Arts
(2-4) SCOTT

May be repeated for credit to a maximum of 7 units.

Basic training and instruction on with Macintosh platform, including an introduction to MiniCad drafting software, as well as word processing, database and spreadsheet applications useful to the theatrical designer.

29A. Scenic Practicum
(1) STAFF

Empirical understanding of methods of assembly and materials for stage scenery. Shop organization and operation are experienced during the construction process.

29B. Lighting Practicum
(1) STAFF

Empirical understanding of optical properties of lighting units, available hanging positions and apparatus, lighting control, electrical safety and stage crew organization.

29C. Costume Practicum
(1) STAFF

Empirical understanding of methods of assembly and materials for stage dress. Costume shop organization and operation are experienced during the construction process.

29D. Run Crew Practicum
(1) STAFF

Empirical understanding of backstage organization and operation during live performances.

31. Costume Techniques
(2-4) KENNEDY

Prerequisite: Dramatic Art 29C.

May be repeated for credit to a maximum of 4 units.

Introduction to materials and techniques used in various areas of costuming, including masks, wigs, millinery, fabric dying, pattern development and alteration. Subject matter varies by quarter.

49. Theatre Workshop
(1-6) STAFF

Prerequisite: lower-division standing.

A maximum of 25 units of Dramatic Art 49 and 149 combined may be accepted for credit in the major.

Projects in costume, scenery, lighting, acting, directing.

60. Appreciation of Theatre
(4) STAFF

This introductory course in playgoing surveys the general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, videotapes, and live performances will be studied whenever possible. (F,W,S)

60S. Appreciation of Theatre
(3) STAFF

This introductory course in playgoing surveys the general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, videotapes, and live performances will be studied whenever possible. (SS)

94. Group Studies for Lower-Division Students
(1-4) STAFF

Prerequisite: open to freshmen and sophomores only.

May be repeated fro credit to a maximum of 8 units.

Special opportunities for study, research, and project preparation.

UPPER DIVISION

104A. Introduction to Playwriting
(4) POTTER

Prerequisite: Not open to freshmen.

Exploration of ideas for the stage. Experiments with mime, monologue, dialogue, scene, characters, and action. Resources of the stage, principles of economy. Analysis of scripts on paper and in production. A series of written assignments and a final project (scenes from work in progress). (F)

104B. Advanced Playwriting
(4) POTTER

Prerequisite: Dramatic Art 104A.

May be repeated for up to 8 units of credit.

Development of selected student projects into completed working scripts; further studies in script analysis. Writing and rewriting. (W)

104C. Script Workshop
(1-4) POTTER

Prerequisite: Dramatic Art 104B.

May be repeated for up to 8 units of credit.

a) Original scripts workshop; rehearsal and production of selected student scripts, in collaboration with student director, actors, etc. b) Staged reading series: development of scripts for public staged readings. (S)

106. Dramatic Theory and Criticism
(4) EGAN, KING

Prerequisite: upper-division standing.

Intensive discussion of several major theories of the drama and an application of those theories to selected plays.

110A-B-C. Advanced Movement for the Stage
(2-2-2) DONLON

Prerequisite: Dramatic Art 10C; concurrent enrollment in 151A (for DA 110A): concurrent enrollment in 151B (for DA 110B): concurrent enrollment in 151C (for DA 110C).

May each be repeated once for credit by recommendation of instructor.

A continuation of the Dramatic Art 10 series with increased focus on period movement, tumbling, clowning, and physical characterization.

110D. Advanced Performance Projects
(3) DONLON

Prerequisite: Dramatic Art 110C.

Advanced studio projects utilizing the actor's physical and vocal skills to develop orginal theatre.

111A-B-C. Advanced Voice Laboratory
(2-2-2) MORGAN

Prerequisites: Dramatic Art 15A-B-C; concurrent enrollment in 151A (for DA 111A): concurrent enrollment in 151B (for DA 111B): concurrent enrollment in 151C (for DA 111C).

May each be repeated once for credit by recommendation of instructor.

Advanced problems in voice for the actor with continued emphasis on craft, plus the creative and expressive uses of the voice with the body.

111D. Dialects for the Stage
(3) MORGAN

Prerequisite: not open to freshmen.

The study of dialects that are often necessary for students pursuing a professional career in theatre. Use of video and audio tapes as well as phonetics to analyze and physicalize a minimum of six dialects.

112. Senior Voice Laboratory
(2) MORGAN

Prerequisite: Dramatic Art 111C.

May be repeated once for credit.

Seminar in advanced voice work for senior students in B.F.A. acting program. Concentration upon the application of vocal techniques to particular characterizations.

121. Advanced Technical Theatre Production
(1-4) STAFF

Advanced problems in planning, drafting, construction, scenic crafts, special effects, properties construction, and rigging of stage scenery.

122. Advanced Scenic Design
(2-4) JAGIM

Prerequisites: Dramatic Art 1, 19, and 22.

May be repeated for credit to a maximum of 7 units.

Concentration on various set design problems including period and style. Includes drawing, drafting of plans and elevations and rendering techniques.

123. Advanced Stage Lighting Design
(2-4) SCOTT

Prerequisites: Dramatic Art 1, 19, and 23.

May be repeated for credit to a maximum of 7 units.

Lecture-demonstration of controllable properties and functions of light. Includes technical drawing: light plots, scheduling and organization for lighting design, drawing using light and shadow, perspective drawing. Practical application through studio exercise.

124. Design Portfolio
(2-4) JAGIM
Prerequisites: Dramatic Art 122 or 123 or 125; upper-division standing.
Exploration of advanced design projects with concentration on individual portfolios.

125. Advanced Costume Design
(2-4) HOLLY
Prerequisites: Dramatic Art 1, 19, and 25.
May be repeated for credit to a maximum of 7 units.
Execution of theoretical costume design projects. Concentration on various costume design problems including period, style, rendering techniques and figure drawing.

126. Advanced Makeup
(2) STAFF
Prerequisite: Dramatic Art 26.
Emphasis on methods of character makeup, special effects, and new prosthetics construction and application techniques.

127. Advanced Theatre Graphics
(1-4) JAGIM, HOLLY
May be repeated for credit to a maximum of 9 units
Advanced drawing for the theatre designer. Continued development in graphic techniques may include orthographic and isometric, light and shade, perspective and line drawing, and rendering.

129. Painting for the Stage
(2-4) JAGIM
May be repeated for credit to a maximum of 8 units.
Advanced work in scenic painting including special textures, foliage, trompe-l'oeil effects as used for stage.

131. Advanced Costume Techniques
(2-4) HOLLY
Prerequisites: Dramatic Art 29C and 31.
May be repeated for credit to a maximum of 6 units.
Exploration of advanced draping, drafting, and tailoring techniques through production related projects.

133. History of Costume
(4) HOLLY
A survey of the development of western clothing and costume from the Egyptians to the present as related to the changing patterns of culture. Short survey of non-Western clothing and costume.

134. Advanced Theatrical Crafts
(2-4) STAFF
Prerequisites: Dramatic Art 29A and 29C.
May be repeated for credit to a maximum of 8 units.
Concentration on special materials and techniques utilized in theatrical productions including decorative and three-dimensional art.

141. Reader's Theatre
(4) STAFF
Study of the different concepts of reader's theatre and practical experience in the preparation and performance of dramas, dramatic poetry, and novels in the reader's theatre style.

149. Theatre Workshop
(1-6) STAFF
Prerequisite: upper-division standing.
A maximum of 25 units of Dramatic Art 49 and 149 combined may be accepted for credit in the major.
Projects in costume, scenery, lighting, acting, directing.

151A-B-C. Advanced Acting
(4-4-4) STAFF
Prerequisites: Dramatic Art 15C and 162; and concurrent enrollment in Dramtic Art 110A and 111A (for DA 151A): concurrent enrollment in 110B and 111B (for DA 151B): concurrent enrollment in 110C and 111C (for DA 151C).
May each be repeated once for credit by recommendation of instructor.
Scene work and exercises exploring various acting styles which may include Greek, Artaud, Shakespeare, period comedy and farce, and Absurd.

151D. Advanced Acting: Modern Trends
(4) STAFF
Prerequisite: Dramatic Art 151C.
Study and performance of contemporary acting developments.

151E. Acting for the Camera
(4) STAFF
Prerequisite: open to dramatic art or theatre majors only.
Exploration of advanced problems of characterization, focusing on technical demands of acting for the camera in television and film. Includes in-studio filming of scenes.

151F. Senior Auditions
(3) STAFF
Prerequisites: Dramatic Art 151C.
May be repeated once for credit.
Preparation and study of material and techniques for professional and graduate school audition.

151G. Alternate Acting Styles
(4) STAFF
Prerequisite: Dramatic Art 151C.
Continued work in performance styles and other skills.

151J. History of Acting
(4) OLAUSON
Prerequisite: upper-division standing.
Study of acting styles and practices of the twentieth-century examining various media and textual resources including performances, interviews, autobiographies and writings of theatre practitioners.

151S. Senior One-Person Shows
(3) STAFF
Prerequisite: Dramatic Art 151C.
Individually researched performance projects.

152. Introduction to Stage Directing
(4) STAFF
Basic principles and practice of directing. Lectures, demonstrations, and projects to give the nonspecialist a general idea of the directorial process.

153B. Techniques of Directing
(4) STAFF
Prerequisites: Dramatic Art 1, 14, 19, and 152.
Laboratory in directorial scene work.

153C. Directorial Production
(4) STAFF
Prerequisite: Dramatic Art 153B.
Full directorial responsibility for the mounting of a one-act play.

153D. Projects in Directing
(4) STAFF
Prerequisite: Dramatic Art 153C.
Special projects for the advanced director.

153E. Production Projects
(1-6) STAFF
Prerequisite: upper-division standing.
May be repeated for credit to a maximum of 8 units.
Special projects in each area of concentration.

154. Opera Directing
(4) STAFF
Examination of the director's role in operatic and music theatre production.

155A. American Drama to 1940
(4) KING
History of the American drama and theatre from early years to 1940. Important plays, performers, institutions, and styles of production will be given selective attention.

155B. American Drama 1940 to Present
(4) KING
History of the American drama and theatre from 1940 to the present. Important plays, performers, institutions, and styles of production will be given selective attention.

160A. Dramatic Literature: Ancient Literature
(4) KING, WILLIAMS
A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theatre and artistic styles, and critical theory from its origin in the western world through the Greeks to the Roman Empire. (S)

160B. Dramatic Literature: Medieval and Renaissance Drama
(4) POTTER
Theatre and drama from the medieval cathedral and market square to the Jacobean playhouses and Spanish Corrales, including the plays of Marlowe, Jonson, Webster, Lope de Vega and Calderon.

160C. Dramatic Literature: Neo-Classical Drama
(4) EGAN
A study of French drama of the seventeenth century and British drama of the Restoration and eighteenth century, focusing on the plays of Corneille, Moliere, Racine, Wycherley, Congreve, Sheridan, and others, and dealing with related developments in theatre, culture, and society.

160D. Dramatic Literature: Age of Revolution
(4) WILLIAMS
A study of the evolving form and styles of drama and theatre from 1750 to 1850, including plays by Goldoni, Lessing, Sheridan, Schiller, Goethe, Kleist, Büchner, Gogol, and Nestroy.

160E. Dramatic Literature: Early Modern Drama
(4) EGAN, WILLIAMS
A study of European drama in the period from Ibsen to World War I, focusing on the plays of Ibsen, Strindberg, Chekhov, Shaw, and others, and dealing with related developments in theatre, culture, and society. (W)

160F. Dramatic Literature: Modern and Contemporary Drama
(4) STAFF
A study of the evolving forms and styles of drama and theatre from World War I to the present, including plays by Shaw, Pirandello, Brecht, O'Neill, Miller, Sartre, Beckett, Ionesco, Pinter, and others.

161A. The Rise of the Professional Theatre
(4) KING, WILLIAMS
Prerequisite: upper-division standing.
The history of the theatre from the mid-seventeenth century to the end of the nineteenth century. Focus will be on the rise of the acting profession, the establishment of standing theatres, and the evolution of playhouse architecture, scene design, and physical production. Plays that highlight these issues will be read and discussed.

161B. The Modern Theatre: Theory and Practice
(4) WILLIAMS
Prerequisite: upper-division standing.
The history of the theatre from the late nineteenth century to the present day. Readings on the theory of major theatrical innovators and an investigation of how and whether these theories were realized on stage. Particular emphasis on the work of Stanislavsky, Appia, Craig, Meyerhold, Piscator, Brecht, Artaud, Barrault, Wieland, Wagner, and the contemporary avant-garde.

162. Shakespeare on Film and Stage
(4) POTTER
An investigation of Shakespeare's plays through the media of performance; viewing of Shakespearean productions on film and videotape, in classroom rehearsal, and in stage performances as available; reading and critical analysis of selected Shakespearean plays.

163. Race, Gender, and Performance
(4) COLE
Prerequisite: upper-division standing.
Comparative analysis of contemporary American plays and performances by artists of diverse gender, sexual, ethnic, and racial backgrounds. Students

learn to perceive and critically respond to race and gender issues in plays and the theatrical production.

166. African Theatre and Performance
(4) COLE

Prerequisite: upper-division standing.

Introduction to a wide variety of performance modes in Africa, from scripted drama and improvised theatre in European and African languages to masking, storytelling, oral poetry, and ritual.

186. Dance Production
(1-4) HOLLY, SCOTT

Prerequisite: Dramatic Art 123 or 125.

May be repeated for credit to a maximum of 16 units, but only 8 units may be applied toward the major.

Exploration of the process of collaboration between dance choreographers and theatre designers in the development of designs for dance productions. Final project will be a public performance of the choreographers' and designers' work.

190. Production Administration
(3) STAFF

Prerequisite: upper-division standing.

May be repeated for up to 6 units of credit.

Workshop for advanced students functioning as assistants to directors, designers, and technical directors. Portfolio, promptbook, or paper required.

191. Theatre Management
(4) MCDANIEL

Business organization and management for the educational, community, and professional theatre, including budgeting, publicity, public relations, and box office principles.

193H. Senior Honors Project
(4) STAFF

Prerequisite: senior standing.

Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination. This course is for students who will complete their projects in one quarter. A final grade will be assigned upon completion.

Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

193HA-HB-HC. Senior Honors Project
(2-4, 2-4, 2-4) STAFF

Prerequisite: senior standing: DA 193HA for 193HB: DA 193HA or 193HB for 193HC.

Students must have a 3.0 university grade-point average and a 3.4 departmental grade-point average, unless exempt by petition; faculty nomination. 4 to 8 units required in honors sequence; minimum of 2 units per quarter.

HA: This course is the first in the sequence for students who will complete their projects in either two or three quarters. An "in-progress" grade will be assigned; students may then enroll in either Dramatic Art 193HB or 193HC.

HB: Dramatic Art 193HA; this course is the second in the sequence for students who will complete their projects in three quarters. An "in-progress" grade will be assigned; students will then enroll in Dramatic Art 193HC.

HC: Dramatic Art 193HA or 193HB; this course is the final in the two or three-quarter sequence. A final grade will be assigned upon completion.

Advanced thesis project in either academic research or creative activity, supervised by a faculty advisor. Students successfully completing the project, as evaluated by a three-person committee, will graduate with distinction in the major.

194A. Group Studies in Acting and Directing
(1-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units.

Intensive study, research, and project preparation in acting and directing.

194D. Group Studies in Design
(1-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units.

Intensive study, research, and project preparation in theatrical design.

194L. Group Studies in Literature
(1-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units.

Intensive study, research, and project preparation in dramatic literature.

194T. Group Studies in Theatre
(1-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units.

Intensive study, research, and project preparation in theatre.

195. Principles of Stage Management
(2) MCDANIEL

Prerequisites: Dramatic Art 1.

Discussion and research into the duties of the stage manager from pre-production through strike. Areas covered include communication, rehearsal procedures, and performance skills. Discussions with directors, designers, and invited guests employed in the field.

195P. Stage Management Practicum
(2-4) STAFF

Prerequisite: Dramatic Art 195.

May be repeated for credit to a maximum of 16 units.

Production oriented course allowing student practical experience in stage management training. Student will serve as assistant stage manager or stage manager for main stage or student directed departmental production.

199. Independent Studies in Dramatic Art
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in dramatic art.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

199RA. Independent Research Assistance in Dramatic Art
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in dramatic art.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Supervised assistance in faculty research project.

GRADUATE COURSES

200. Graduate Colloquium
(1) STAFF

Prerequisite: graduate standing.

Required of all new graduate students.

Introduction to the library for graduate students who have just joined the program. Exercises in the bibliography of theatre. Will meet three times during fall quarter.

201. Graduate Colloquium
(1) STAFF

Prerequisite: graduate standing.

May be repeated for credit. Required of all doctoral students.

Three times during winter quarter. Topics will include writing for periodicals, job opportunities, research projects of students and faculty, conferences and learned societies. Guests will be invited to talk about research projects and professional interests.

202. Graduate Colloquium
(1) STAFF

Prerequisite: graduate standing.

May be repeated for credit. Required of all doctoral students.

Three times during spring quarter. Topics will include writing for periodicals, job opportunities, research projects of students and faculty, conferences and learned societies. Guests will be invited to talk about research projects and professional interests.

210. Tragic Drama
(4) STAFF

Prerequisite: graduate standing.

The theory and practice of tragedy from the Greeks to modern times. Dramatists include Aeschylus, Sophocles, Euripides, Shakespeare, Webster, and Ibsen. Theory includes texts by Aristotle, Hegel, Nietzsche, Girard, Ricoeur, Lukacs, Frye, and others.

211. Comic Drama
(4) STAFF

Prerequisite: graduate standing.

The theory and practice of comedy from the Greeks to modern times. Dramatists include Aristophanes, Shakespeare, Moliere, Sheridan, Shaw, Stoppard, and others. Theory includes texts by Kierkegaard, Freud, Koestler, Cook, Frye, Langer, and others.

220. The History and Theory of Acting
(4) WILLIAMS

Prerequisite: graduate standing.

Readings in the major theorists of acting and in the history of acting in the Western and Asian theatre.

221. The History and Theory of Directing
(4) WILLIAMS, EGAN

Prerequisite: graduate standing.

Readings in the major theorists of directing and in the history of directing in the modern and contemporary theatre.

222. The History of Physical Theatre
(4) KING, WILLIAMS

Prerequisite: graduate standing.

A study of the architectural development of Western and Asian theatre with attention paid to the impact of the theatre space on modes of performance.

230. Dramatic Theory: Aristotle to Lessing
(4) STAFF

Prerequisite: graduate standing.

Detailed study of theories from *The Poetics* to the *Hamburg Dramaturgy.*

231. Modern Dramatic Theory
(4) STAFF

Prerequisite: graduate standing.

Major theories and concepts from Lessing to Langer.

232. Contemporary Critical Theory
(4) COLE

A graduate level introduction to contemporary critical theory. Topics may include Marxism, psychoanalysis, structuralism, post-structuralism, postmodernism, postcolonialism, and performance theory.

233. Feminist and Gender Studies in Theatre and Performance
(4) COLE

Advanced problems in feminist theories of theatre and performance. In addition to gender theory, examination of feminist perspectives on dramatic history and criticism.

240. Foundations of American Theatre and Drama
(4) KING

Prerequisite: graduate standing.

Topics in the study of emergent American drama and theatre from the beginnings into the early twentieth century. Content variable.

241. Twentieth Century American Theatre and Drama
(4) KING
Prerequisite: graduate standing.
Topics in the study of American theatre and drama from the early twentieth century to the present day. Content variable.

242. World Theatre and Drama
(4) COLE, WILLIAMS
Prerequisite: graduate standing.
An examination of the theatre and performance traditions of Africa, Asia, and/or Latin America. Focus may include specific geographic areas or examine non-Western theatre traditions cross-culturally.

243. Medieval Drama
(4) POTTER
Prerequisite: graduate standing.
An exploration of the sacred and profane traditions of drama in medieval England and the Continent, with close attention to staging practices and the social and intellectual context of the times.

244. Shakespeare
(4) EGAN, POTTER
Prerequisite: graduate standing.
Study of Shakespeare's artistry through intensive discussion of selected plays and analysis of criticism, staging, and sources.

245A. Theatre and Drama of the European Enlightenment
(4) WILLIAMS
Study of the playwrights and theatrical practitioners whose work contributed toward the construction of Enlightenment culture: figures studied include Farquhar, Sheridan, Lessing, Voltaire, Garrick, Diderot, Rousseau, Goethe, Schiller, and Mozart.

245B. Theatre of Sturm und Drang and Romanticism
(4) WILLIAMS
A study of Romantic theatre as an outgrowth of and alternative to Enlightenment, and as a phase in the formation of the modern theatre: figures studied include Lenz, Herder, Schiller, Kleist, Hugo, de Musset, Byron, Shelley, and Wagner.

245C. Theater of Realism, Naturalism, and Symbolism
(4) WILLIAMS
Not open for credit to students who have completed Dramatic Art 245.
A study of the founding phases of the modern and contemporary theatre with an intensive study of one or more of the following playwrights: Ibsen, Strindberg, Shaw, Wedekind, Chekhov, and other playwrights between 1880 and 1914.

246. Modern British Drama: Shaw and Contemporaries
(4) EGAN
Prerequisite: graduate standing.
Study of major British playwrights of the late nineteenth and earlier twentieth century, focussing especially on George Bernard Shaw.

247. Modern British Drama: Osborne to Present
(4) EGAN
Prerequisite: graduate standing.
Study of major contemporary playwrights.

250. Dramatic Literature and Theatre History
(4) STAFF
Prerequisite: graduate standing.
Varies in content from year to year. Recent offerings have included Tudor and Stuart Drama, Epic Theatre, the Irish Theatre, opera and drama. Literature on the theatre, feminist drama.

251. Studies in Drama
(4) STAFF
Prerequisite: graduate standing.
Studies in drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. (Will be offered irregularly.)

252. Historiography and Methodology
(4) COLE
By analyzing leading examples of theatre scholarship, both new and classic texts, this course serves as a workshop, helping students to formulate original research questions and utilize creative interdisciplinary research methods.

260. Advanced Problems in Theatre Practice
(1-4) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 12 units.
Discussion of problems in repertory; practical application of specialized individual projects.

261. Advanced Problems in Directing
(4) LACKNER
Prerequisite: graduate standing.
Discussion of advanced problems in directing; practical application and projects.

262. Advanced Problems in Design
(2-4) STAFF
May be repeated for credit to a maximum of 8 units.
Discussion of advanced problems in design; practical application and projects.

263. Advanced Problems in Dramaturgy
(2) STAFF
Prerequisite: graduate standing.
May be repeated for credit to a maximum of 8 units.
Discussion of advanced problems in dramaturgy; practical application and projects.

500. Teaching: Methods and Practice
(4) STAFF
Prerequisites: graduate standing and current appointment as a departmental teaching assistant.
Required of all teaching assistants. May be repeated for credit. No credit allowed toward advanced degrees. S/U grade.
Introduction to the problems and techniques of teaching dramatic art, through teaching responsibilities in departmental courses and through consultation with supervising faculty members.

596. Directed Reading and Research
(2-8) STAFF
Prerequisite: consent of instructor.
Individual tutorial. A written proposal for each tutorial must be approved by the department chair.

598. Master's Thesis Project, Research and Creative
(1-8) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units. S/U grade. No credit allowed toward advanced degrees.

599. Dissertation Research and Preparation
(1-12) STAFF
Prerequisite: consent of chair of student's doctoral committee.
May be repeated for credit to a maximum of 36 units. S/U grading. No credit allowed toward advanced degrees.
Dissertation research and preparation.

East Asian Languages and Cultural Studies

Department of East Asian Languages and Cultural Studies,
Division of Humanities and Fine Arts, Humanities and Social Sciences 2214;
Telephone (805) 893-4549
E-mail: lebeck@humanitas.ucsb.edu
Web site: www.eastasian.ucsb.edu
Department Chair: Kuo-ch'ing Tu

Faculty

Ronald Egan, Ph.D., Harvard University, Professor (Chinese literature, aesthetics)

Joshua Fogel, Ph.D., Columbia University, Professor (Chinese and Japanese history, historiography)

Sabine Frühstück, Ph.D. University of Vienna, Assistant Professor (modern Japanese cultural studies)

Allan Grapard, Ph.D., National Institute for Oriental Languages and Civilizations, Paris, Professor (Japanese religions)

Chen-chuan Hsu, M.A., UC Santa Barbara, Lecturer (Chinese language)

Haruko Iwasaki, Ph.D., Harvard University, Associate Professor (Japanese literature—Edo)

Sun-Ae Lee, M.A., Ohio State University, Lecturer (Korean language, Japanese language)

Kathryn Lowry, Ph.D., Harvard University, Assistant Professor (Chinese song and drama)

Tomiko Narahara, Ph.D., Harvard University, Assistant Professor (Japanese linguistics)

John Nathan, Ph.D., Harvard University, Professor (modern Japanese fiction and film)

Katherine Saltzman-Li, Ph.D., Stanford University, Assistant Professor (Japanese literature and drama)

Hyung Il Pai, Ph.D., Harvard University, Associate Professor (Korean history, East Asian archaeology)

William Powell, Ph.D., UC Berkeley, Associate Professor (Chinese religions)

Kuo-ch'ing Tu, Ph.D., Stanford University, Professor (Chinese poetry and poetics, world literatures in Chinese)

Hsiao-jung Yu, Ph.D., UC Berkeley, Associate Professor (Chinese linguistics, pre-modern fiction)

Emeriti Faculty

Robert L. Backus, Ph.D., UC Berkeley, Professor Emeritus (Japanese literature)

Chi-yun Chen, Ph.D., Harvard University, Professor Emeritus (Chinese history)

Chauncey S. Goodrich, Ph.D., UC Berkeley, Professor Emeritus (early Chinese)

Kenneth H. Pai, M.F.A., Iowa State University, Professor Emeritus (modern Chinese fiction)

Asian Studies Graduate Advisory Committee

Kuo-ch'ing Tu, Ph.D. (East Asian Languages and Cultural Studies)

Ronald Egan, Ph.D. (East Asian Languages and Cultural Studies)

Joshua Fogel, Ph.D. (East Asian Languages and Cultural Studies, History)

Allan Grapard, Ph.D. (East Asian Languages and Cultural Studies)

Affiliated Faculty

Francesca Bray, Ph.D. (Anthropology)

Mark Elliott, Ph.D. (History)

Laurie Freeman, Ph.D. (Political Science)

Tsuyoshi Hasegawa, Ph.D. (History)

Luke Roberts, Ph.D. (History)

Peter Sturman, Ph.D. (Art History)

Mayfair Yang, Ph.D. (Anthropology)

The Department of East Asian Languages and Cultural Studies offers majors in Asian Studies, Chinese, and Japanese, together with coursework in four areas: East Asian cultural studies (involving more than one East Asian country), Chinese, Japanese, and Korean.

Asian Studies, an interdepartmental program administered by the Department of East Asian Languages and Cultural Studies, offers an undergraduate major leading to the B.A. degree and a graduate program leading to the M.A. Both the undergraduate and the graduate programs enable the student to study an Asian area (China, Japan, or Korea) through two or more academic disciplines and, at the same time, to acquire at least two years of training in a language relevant to the area of study. The disciplines that contribute most to Asian studies at UCSB are anthropology, art history, literature, history, philosophy, political science, and religious studies. The languages which may be taken at UCSB in conjunction with Asian studies courses are Chinese (Mandarin and Classical), Japanese, and Korean. Any literary Asian language, however, can serve to fulfill the language prerequisite if the student can demonstrate competence by exam equivalent to two years of study.

The chair serves as undergraduate advisor. It is important to consult early with the advisor to ensure a proper balance between breadth and concentration in the study plan. In addition, students are required to meet with the advisor at least once each year to discuss their work and any issues that have arisen, or seem likely to arise, in the course of their studies.

Interdisciplinary study of an Asian culture, together with language training, provides a good basis for graduate work at the M.A. or Ph.D. level. In addition, the Asian studies major provides specialized knowledge for students who anticipate a career in business, law, journalism, government service, or museum work. It should be noted, however, that additional training in a professional school is necessary for entrance into many of these fields.

Students with a bachelor's degree in Asian studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

The Chinese and Japanese majors provide an opportunity for extensive language training and interdisciplinary coursework, concentrating on the humanistic fields of literature, history, and religious studies. The major in Chinese begins with work in modern Mandarin, the standard speech of the Beijing area, and moves on subsequently to Classical Chinese, which was the dominant literary medium until the twentieth century. The major in Japanese permits a concentrated study of the standard language of the Tokyo area and encourages an acquaintance with the factors that underlie that language, namely Classical Japanese and Classical Chinese. Beyond language training, both of these majors focus on the humanistic fields set within a broad social and historical context.

The Chinese and Japanese majors are more geographically and culturally specific than is the Asian studies major, and they require considerably more advanced language training in Chinese or Japanese. Students should examine the different majors to determine which best suits their objectives.

The Chinese and Japanese majors are intended to provide preparation for graduate academic work in East Asian studies, or for careers in a wide variety of fields, including business, journalism, diplomacy, and museum work. Many recent majors have gone on to combine their undergraduate training with a professional degree in law or international management.

Undergraduate Program

Bachelor of Arts—Asian Studies

Preparation for the major. Students must have at least two years (0-30 units) of an Asian language (Chinese, Hindi, Japanese, Korean, Sanskrit, Tibetan) pertaining to the area of their interest or demonstrate an equivalent level of competence. In addition, they must take 8 units selected from Art History 6D; Chinese 33; Comparative Literature 31; EACS 2, 3, 20, 21; History 80, 84, 85, 86, 87; Japanese 22, 25, 32; Korean 82.

Upper-division major. The major consists of 40 units of upper-division courses selected from two or more disciplines and generally concentrating on East Asia (China, Japan, Korea) or South Asia (India). It is advisable that one of the disciplines be history; in any case, all majors are required to take 4 units of Asian history chosen from the lower- or upper-division list. Courses for the major may be selected from the following list. Courses outside the list may be substituted in consultation with the advisor to accommodate individual interests consonant with the overall purpose of the program.

Course List for Upper-Division Majors

Anthropology

126. East Asia: A Feminist Perspective
138A. Elements of Traditional Chinese Culture
138B. Socialist Chinese Society
142. Peoples and Cultures of India
144. Peoples and Cultures of Southeast Asia
154. Special Topics in Social Anthropology

Katherine Saltzman-Li

ASSISTANT PROFESSOR, EAST ASIAN LANGUAGES & CULTURAL STUDIES

Katherine Saltzman-Li's passion for Chinese and Japanese languages and literature began when she was in high school. "I read Lady Murasaki's *The Tale of Genji* in translation and it drew me in," says the assistant professor of East Asian languages and cultural studies. "I loved studying the languages and I loved the literature."

"I try to engage students through my love of the material."

In her courses on classical and medieval Japanese literature and drama, she hopes to impart some of her enthusiasm to her students.

"After college, I was exposed to Kabuki in Japan. That same sense of excitement that *The Tale of Genji* had elicited led me to focus on Kabuki in graduate studies," she continues.

"I try to engage students through my love of the material and offer them as many opportunities as possible for discussion and practice on writing skills," she says. Often her students are encountering the subject matter for the first time and face a variety of academic challenges.

To help them develop critical thinking skills, Saltzman-Li often assigns small groups to discuss topics in advance of a class meeting and then share their insights with the rest of the class.

157. Medicine in Chinese Culture
177. China Through Film

Art History

134A. Buddhist Art
134B. Early Chinese Art
134C. Chinese Painting
134D. Art and Modernism in China
134E. The Art of Chinese Landscape
134F. The Art of Japan
134G. Japanese Painting
134H. Ukiyo-e: Pictures of the Floating World
135AA-ZZ. Special Topics in Asian Art
186R. Seminar in Asian Art

Chinese

101A-B-C. Introduction to Classical Chinese
102A-B-C. Advanced Chinese Conversation
105. Workshop in Chinese Translation
110A. Classics of Ancient China
110B. The Great Age of Chinese Poetry
111. The Traditional Chinese Short Story
112A-B. Major Movements in Modern Chinese Literature
115A. Imagism, Haiku, and Chinese Poetry
116. Survey on World Literatures in Chinese
121. Seminar on Taiwan Literature
122A-B-C. Advanced Modern Chinese
124A-B. Readings in Modern Chinese Literature
125. Business Chinese
132A. Special Topics in Classical Chinese Poetry
132B. Special Topics in Modern Chinese Poetry
136. Advanced Readings in Vernacular Literature
137. Readings in Vernacular Drama
139. Boundaries of the Self in Late Imperial Chinese History
140. Spaces in the Chinese City
141. China in Transition Through Films
145. Mythology and the Supernatural in Chinese Literature
148. Historic Lives
149. Literati Culture
150. The Language of Vernacular Chinese Literature
166A. Religion in Chinese Culture
166B. Taoist Traditions of China
166C. Confucian Traditions: The Classical Period
166E. The Flowering of Chinese Buddhism
166F. Religious Literature in Chinese: Buddhist Text
166G. Religious Literature in Chinese: Confucian Texts
166H. Religious Literature in Chinese: Taoist Texts
183. The Quest for Narrative in Late Imperial China
184A. History of China, Ancient-589 C.E.
184B. History of China, Sixth to Seventeenth Centuries
184T. History of Chinese Thought
184W. Chinese Historiography
186M. Chinese Marxism
186P. Proseminar in History of China
197. Senior Honors Project
198. Readings in Chinese
199. Independent Studies in China

East Asian Cultural Studies

161B. Buddhist Meditation Traditions
164B. Buddhist Traditions in East Asia
175. Sacred Geography in China and Japan
178. The Body Religious in Chinese Culture
180A. History and Culture of East Asia, Pre-600 A.D.
180B. History and Culture of East Asia, 600-1600 A.D.
180C. History and Culture of East Asia, 1600-1945
180P. Proseminar in East Asian History and Culture
185. Translation in Theory and Practice
189A. Vietnamese History

History

138B. The Vietnam Wars
138P. Proseminar in the Vietnam Wars
184E. Chinese Archeology
185A-B. Modern China
185L. Chinese Readings in History
185P. Proseminar on Modern China
186D. The Issue of Democracy and the Chinese Tradition
187A. Japan Under the Tokugawa Shoguns
187B. Modern Japan
187C. Recent Japan
187P. Proseminar in Japanese History
188A. History of Women in China: From the Ancient Period to the 19th Century
188B. History of Women in China: From the 19th Century to the Present

Japanese

101A-B-C. Pre-Modern Japanese
110A. Survey of Japanese Literature: Classical
110B. Survey of Japanese Literature: Medieval
110C. Survey of Japanese Literature: Early Modern
111. Topics in Traditional Japanese Literature
112. Survey of Modern Japanese Literature
114A. Survey of Modern Japanese Literature
114B. Survey of Modern Japanese Literature
115. Topics in Twentieth-Century Japanese
119. Shugendo: Japanese Mountain Religion
120A-B-C. Advanced Japanese
126. Business Japanese
144. Grammar for Advanced Reading
145. Readings in Twentieth-Century Japanese Literature
146. Advanced Japanese Readings
149. Forms of Japanese Drama
155. Genre in the Japanese Verbal Arts
159. Japanese Cinema
160. Topics in Japanese Culture
162. Representation of Sexuality in Modern Japan
167A-B. Religion in Japanese Culture
167D. Shinto
169. Seminar in Traditional Japanese Drama
170. Structure of Japanese
187L. Japanese Readings in History
197. Senior Honors Project
198. Readings in Japanese
199. Independent Studies in Japanese

Korean

113. Korean Literature Survey
120. Korean Culture and Society
121A-B-C. Advanced Korean
182A. Korean History and Civilization: Part I
182B. Korean History and Civilization: Part II
182P. Proseminar in Korean History
199. Independent Studies

Political Science

135. Government and Politics of Japan
136. Government and Politics of China
138. Political and Economic Development in Pacific Rim Countries
139. Government and Politics in Southeast Asia

Religious Studies

157. Religious Arts of Asia
158. Hindu Myth and Image
159A-B-C-D-E-F-G-H-I-J-K-L. Religious Literature in Sanskrit
160. Religious Traditions of India
161A. Yoga Traditions of India
161B. Buddhist Meditation Traditions
162A. Indian Philosophy and Religion
163. Images of Japan: The Ideology of Representation
164A. Buddhist Traditions in South Asia
165. The Vedic Traditions of India
166AX. Chinese Texts
169. Hindu Devotional Traditions
170. Hindu Dharma: Law and Ethics in Indian Society
181A-B-C. Religious Literature in Hindi

Bachelor of Arts—Chinese

Preparation for the major. Students may elect to emphasize either Mandarin or Classical Chinese. The Mandarin concentration requires at least three quarters of Classical Chinese; the Classical concentration requires at least three quarters of Mandarin. Completion of a concentration in either Mandarin or Classical Chinese is voluntary and will not be formally acknowledged on official transcripts or diplomas. Required: Chinese 1, 2, 3, 4, 5, 6 (for Mandarin concentration); Chinese 1, 2, 3, 101A-B-C (for Classical concentration); two quarters of Chinese 8A-B-C; 4 units to be selected from Art History 6D; Chinese 33; Comparative Literature 31; EACS 2, 3, 20, 21; History 80, 84, 85, 86. Students who have completed a more advanced course in a lower-division language sequence will not be permitted to take for credit a course that is lower in the sequence. Only letter grades are credited to the preparation for the major, with the following exception: a lower-division language course when the final course in the sequence is passed with a C or better.

Upper-division major. Students pursuing the Classical Chinese concentration must complete 44 upper-division units, including the following: 20 units of Classical Chinese from 132A-B, 133, 134, 137, or appropriate courses by petition. Twelve units from Anthropology 126, 138AB, 157, 177; Art History 134A-B-C-D-E, 135AA-ZZ, 186R; Chinese 166C-F-G-H, 183, 184A-B, 184T-W, 186M-P; EACS 161B, 164B, 175, 178; History 184E, 185A-B-P, 186D; Political Science 136; Religious Studies 166AX. Twelve units from Chinese 111, 112A-B, 115A, 116, 121, 133, 137, 139, 140, 141, 145, 148, 149, 150, 166A-B-E, 183; EACS 185.

Students pursuing the Mandarin concentration must complete 44 upper-division units, including the following: Chinese 101A-B-C, one course from 132A or 132B. Twelve units of Mandarin from 102A-B-C, 120, 122A-B-C, 124A-B, 125, 136, 150, 166F-G-H; Religious Studies 166AX. Eight units from Anthropology 126, 138A-B, 157, 177; Art History 134A-B-C-D-E, 135AA-ZZ, 186R; Chinese 166C, 183, 184T-W, 186M-P; EACS 161B, 164B, 175, 178; History 184A-B-C-P, 185A-B-P, 186D; Political

Science 136. Eight units from Chinese 105, 110A-B, 111, 112A-B, 115A, 116, 121, 137, 139, 140, 141, 145, 148, 149, 166A-B-E, 183; EACS 185.

Senior Honors Program in Chinese

Students may request nomination for the senior honors program in Chinese by filing an application, or they may be nominated by the faculty. The minimum grade-point average for entrance to the program is 3.0 overall and 3.5 in the Chinese major. Candidates for the program must have completed at least 105 units, must expect to graduate within five quarters, and must have completed at least two upper-division courses in Chinese. Applications for the program and brochures describing requirements are available in the department office.

Minor—Chinese

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Chinese and those offered by other departments and applied to the minor.

Preparation for the minor. Chinese 1, 2, 3, 4, 5, 6 or equivalent (0-30 units) and 4 units selected from Chinese 33, Comparative Literature 31, EACS 2, 3, or 20.

Upper-division minor. Twenty units, distributed as follows: One course (4 units) from Chinese 101A or 122A; Sixteen units of upper-division electives chosen from the following: Anthropology 126, 138A-B, 157, 177; Art History 134B-C-D-E, 135AA-ZZ, 186R; Chinese 101A-B-C, 105, 110A-B, 112A-B, 115A, 116, 121, 122A-B-C, 124A-B, 125, 132A-B, 137, 139, 140, 141, 145, 148, 149, 150, 166A-B-C-E-F-G-H, 183, 184A-B-T-W, 186M-P, 198, 199; EACS 164B, 175, 178, 180A-B-C-P, 185; History 184S, 185A-B-L-P, 186D; Political Science 131, 136; Religious Studies 166AX.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Bachelor of Arts—Japanese

Preparation for the Major. Required, with an average grade of C or better: Japanese 1, 2, 3, 4, 5, 6. In addition, 8 units selected from EACS 2, 3, 20, 21; Japanese 22, 25, 32, or History 80, 87. (If an upper-division course is substituted, however, it cannot be applied to the upper-division major). Students who have completed an advanced course in a lower-division language sequence will not be permitted to take for credit a course that is lower in the sequence. Only courses taken with letter grades are credited to the preparation for the major and a lower-division language course when the final course in the sequence is passed with a C or better.

Upper-division major. Forty-seven units are required with an average grade of C or better: 15 units from Japanese 120A-B-C; 4 units from Japanese 101A; 4 units from EACS 180A-B-C-P or History 187A-B-C-P; 16 units from Art History 134F-G-H, 135AA-ZZ, 186R; Chinese 101A; EACS 161B, 175, 180A-B-C-P, 185, 189A; History 138B; Japanese 101B-C, 110A-B-C, 111, 112, 114A-B, 115, 119, 126, 144, 145, 146, 149, 155, 159, 160, 162, 167A-B-D, 169, 197; Political Science 135; and 8 units from Japanese 144, 145, 146, 170, 187L, 198, 199. For additional study relevant to the major, any of the courses on Japan offered in art history, history, political science, and religious studies are recommended, in addition to courses in Classical Chinese. A course in literary theory and criticism is highly recommended, and may be substituted by arrangement with the major advisor for one of the courses in the major.

Senior Honors Program in Japanese

Students may request nomination for the senior honors program in Japanese by filing an application, or they may be nominated by the faculty. The minimum grade-point average for entrance to the program is 3.0 overall and 3.5 in the Japanese major. Candidates for the program must have completed at least two upper-division courses in Japanese. Applications for the program and brochures describing the requirements are available in the department office.

Minor—Japanese

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Japanese and those offered by other departments and applied to the minor.

Preparation for the minor. Japanese 1, 2, 3, 4, 5, 6 or equivalent (0-30 units). Four units selected from EACS 2, 3, 20, 21; Japanese 22, 25, 32.

Upper-division minor. Twenty upper-division units, distributed as follows: One course (4 units) from Japanese 101A or 120A; 16 units of upper-division electives chosen from the following: Art History 134A-F-G-H, 135AA-ZZ, 186R; EACS 161B, 175, 180A-B-C-P, 185; History 187A-B-C-L-P; Japanese 101B-C, 110A-B-C, 111, 112, 114A-B, 115, 119, 120A-B-C, 126, 144, 145, 146, 149, 155, 159, 160, 162, 167A-B-D, 169, 170, 187L, 197, 198, 199; Political Science 135.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to program requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

Admission

In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB." Students may apply directly to either the M.A. program in Asian Studies or M.A. program in Asian Studies with emphasis in East Asian Languages and Cultural Studies. Applicants must submit a statement of purpose describing their preparation for the work in the program and the objective they hope to attain. On the basis of this statement, the department will decide whether applicants are eligible for the program and whether an interdisciplinary program is best suited to their needs.

Preparation for the M.A. in Asian Studies without the emphasis in East Asian Languages and Cultural Studies may include an undergraduate degree in a relevant discipline as well as courses dealing with Asia; some training in an Asian language is recommended. Applicants to the M.A. in Asian Studies with an emphasis in East Asian Languages and Cultural Studies are expected to have three years of language training, or the equivalent, in one East Asian language prior to admission. Students with less background may be admitted at the discretion of the department. Inquiries should be directed to the Chair, East Asian Languages and Cultural Studies, University of California, Santa Barbara, CA 93106.

Master of Arts—Asian Studies

Degree Requirements

Students admitted to the M.A. program may pursue the degree under Plan 1 (thesis) or Plan 2 (comprehensive examination).

Plan 1. Plan 1 students must complete 30 units of upper-division and graduate work, fulfill the language requirement, and write a thesis. Degree candidates must complete at least 20 units of graduate courses numbered between 200 and 299 or 596. A maximum of 6 units of 596 coursework may be counted toward the master's degree. Units earned in courses numbered 501, 502, 597, and 598 do not count toward the 30-unit requirement. Students who choose this plan must satisfy two additional conditions for advancement to candidacy: (1) they must demonstrate the capacity to do some of their thesis research in an Asian language pertaining to their region of interest; and (2) they must submit to the Committee on Asian Studies one research paper, written for any graduate course, as evidence of their capacity to conduct intellectual inquiry and to write competently.

The thesis committee, consisting of the thesis advisor and two additional ladder faculty members, is chosen by the student, nominated by the chair of the Committee on Asian Studies, and appointed by the dean of the Graduate Division. The student's thesis must be approved by each member of the thesis committee.

To fulfill the language requirement, courses in one Asian language pertaining to the region of the student's interest must be taken each quarter for a total of 36 units in one language, including lower-division units. Upper-division language courses may be counted for up to 8 units toward completion of the required units of regular coursework. The language requirement will be waived for a student who enters the program with sufficient competence to use an Asian language in regular coursework, and it will be considered fulfilled at any stage in the program at which the student achieves such competence.

Plan 2. Plan 2 students must complete 36 units of upper-division and graduate work, fulfill the same language requirement described in Plan 1 above, and pass a comprehensive examination. Degree candidates must complete at least 24 units of graduate courses numbered between 200 and 299 or 596. A maximum of 9 units of

596 coursework may be counted toward the master's degree. Units earned in courses 501, 502, 597, and 598 do not count toward the 36-unit requirement.

Students who elect Plan 2 need not have mastered an Asian language to a level at which it can be used for research, but they must demonstrate, by at least a B average in the language courses, that they can deal effectively with the structural and semantic problems of the language and are capable of pursuing this study independently. They must also demonstrate the ability to conduct intellectual inquiry and to write competently by submitting two research papers, written for any graduate course, to the Committee on Asian Studies. After approval, students will be permitted to go on to the comprehensive examination, consisting of two three-hour sessions covering their chosen fields in two disciplines; they will be required to prove both a factual and an interpretive understanding of the region of their interest.

In addition to upper-division courses in the major, graduate students may take courses from the following list. Upper-division and graduate courses outside the list may be substituted on consultation with the advisor. Anthropology 270C-D; Art History 282; Chinese 201, 596, 598; History 200AS, 201AS, 280, 281, 284, 285, 286, 288; Japanese 201, 596, 598; Philosophy 223A-B; Political Science 279, 285, 286; Religious Studies 202, 203, 204, 206, 207, 246, 254, 255, 257, 259, 260.

Master of Arts—Asian Studies—Emphasis in East Asian Languages and Cultural Studies

This emphasis provides a course of study with a geographic focus on East Asia (China, Korea, and Japan) and an interdisciplinary approach, concentrating on the humanities. The emphasis stresses advanced language training as the foundation for research on East Asian cultures. It is assumed that most students will concentrate either upon China or Japan, but the emphasis also requires some study of a second East Asian language (or a classical form) and country, as well as training in critical reappraisals of traditional representations of East Asian cultures. The coursework concentrates on the fields of history, literature, religious studies, and anthropology. Two tracks or plans of study are available, one academic, for students who will go on to pursue a Ph.D., and the other for students who will go into careers in business or government or combine their M.A. with other professional degrees.

Degree Requirements

Students admitted to the emphasis may pursue the degree under Plan 1 (thesis) or Plan 2 (comprehensive examination).

Plan 1. Plan 1 is the academic track, intended for students who go on to pursue a Ph.D. It requires a total of 60 units of coursework in Chinese, Japanese, or East Asian cultural studies courses (*consult the department for specifics*) and 12 units of thesis work. Forty-five of the 60 units must be in upper-division or graduate courses which meet university requirements for eligible units, including at least 20 units of graduate courses numbered between 200 and 299 or 596. A maximum of 10 units of 596 coursework may be counted toward these required 20 graduate units. Units earned in courses 501, 502, 597, and 598 do not count toward the 45-unit requirement. The thesis should demonstrate the student's ability to do original research using sources in Chinese, Japanese, or Korean.

Plan 2. Plan 2 is the track intended for students who will go on to careers outside of academia. It requires 68 units of coursework in Chinese, Japanese, or East Asian cultural studies courses, and 4 units of 597, Preparation for Comprehensive Examinations (consult the department for specifics). Fifty-three of the 68 units must be in upper-division or graduate courses which meet university requirements for eligible units, including at least 24 units of graduate courses numbered between 200 and 299 or 596. A maximum of 12 units of 596 coursework may be counted toward these required 18 graduate units. Units earned in courses 501, 502, 597, and 598 do not count toward the 53-unit requirement. Under this plan, a comprehensive examination is required. Candidates will be examined in two fields to be determined in consultation with an advisory committee.

Five-Year Combined Bachelor of Arts/Master of Arts—Chinese or Japanese

The program is designed for students who wish to enhance their undergraduate major in Chinese or Japanese with graduate training at the masters level in East Asian languages and Cultural Studies. The program will enable students to add a fifth year of advanced language work to the normal undergraduate major, while also giving them opportunity to further their expertise in Chinese or Japanese studies by doing graduate-level coursework in the discipline(s) of their choice in the humanities and social sciences.

The program would allow students to pursue concurrently a bachelor of arts degree in Chinese or Japanese and a master of arts in Asian Studies (with an emphasis in East Asian Languages and Cultural Studies emphasis). These degrees already exist as separate entities, the B.A. normally requiring four years and the M.A. normally requiring two years.

Chinese Courses

LOWER DIVISION

1. Elementary Modern Chinese
(5) STAFF
Not open for credit for students who have completed Chinese 1N.
The beginning course in Chinese. The student acquires a basic knowledge of the grammar, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple texts. Weekly laboratory assignments support and enhance classroom learning. (F)

1N. Elementary Chinese for Native Speakers
(3) STAFF
Prerequisite: consent of instructor.
This course is intended for native Mandarin speakers who wish to learn to read and write Chinese. The content is similar to Chinese 1 with less emphasis on developing oral skills.

1S. Chinese Language and Culture: An Introduction
(4) STAFF
A course for beginners and low-to-intermediate learners interested in Chinese language and culture. Students will learn basic conversational skills and essential vocabulary for practical communication. Video medium will be used to introduce various cultural activities in daily life.

2. Elementary Modern Chinese
(5) STAFF
Prerequisite: Chinese 1.
Continuation of Chinese 1.

2N. Elementary Chinese for Native Speakers
(3) STAFF
Prerequisite: consent of instructor.
Continuation of Chinese 1N.

3. Elementary Modern Chinese
(5) STAFF
Prerequisite: Chinese 2.
Continuation of Chinese 2.

3N. Elementary Chinese for Native Speakers
(3) STAFF
Prerequiste: Chinese 2N.
Continuation of Chinese 2N.

4. Intermediate Modern Chinese
(5) STAFF
Prerequisite: Chinese 3.
Continuation of Chinese 3.

5. Intermediate Modern Chinese
(5) STAFF
Prerequisite: Chinese 4.
Continuation of Chinese 4.

6. Intermediate Modern Chinese
(5) STAFF
Prerequisite: Chinese 5.
Continuation of Chinese 5.

8A-B-C. Chinese Conversation
(2-2-2) STAFF
Prerequisite: Chinese 3.
The course is designed to increase facility and naturalness of delivery in simple dialogue.

25. Elementary Business Chinese
(4) YU
Prerequisites: Chinese 1 and 2.
Not open for credit to students who have completed Chinese 9.
Preparation for students at a beginning level of Chinese to communicate with Chinese business associates. Includes vocabulary and sentence patterns for use in Chinese business situations.

33. Introduction to Chinese Civilization
(4) STAFF
The perennial values and problems of Chinese civilization. Selected readings of major philosophical and literary works (in English translation). Topics include Confucianism, Taoism, aesthetics, domestic life, and Chinese culture in the twentieth century.

UPPER DIVISION

101A-B-C. Introduction to Classical Chinese
(4-4-4) EGAN
Prerequisite: Chinese 3.
The grammar and vocabulary of Classical Chinese. Readings concentrate on philosophical and historical works from the pre-Han period, with some selections from later prose and poetry. Students with some familiarity with Chinese characters (through another Asian language) but not modern Chinese will be accommodated.

102A-B-C. Advanced Chinese Conversation
(2-2-2) STAFF
Prerequisites: Chinese 8A-B.
A course designed to provide an opportunity for upper-division students to continue a concentration on conversational Chinese.

105. Workshop in Chinese Translation
(4) STAFF

Prerequisite: upper-division standing.

Practical work in translation from a variety of Chinese sources depending on need. Emphasis on accuracy and rigor.

110A. Classics of Ancient China
(4) STAFF

Prerequisite: upper-division standing.

Survey of major philosophical and literary works (1000 B.C to A.D. 200) in English translation. Readings from *Book of Songs*, *Analects*, Lao-tzu, and *Records of the Grand Historian* (Shih-chi).

110B. The Great Age of Chinese Poetry
(4) STAFF

Prerequisite: upper-division standing.

Survey of lyric poetry and prose (A.D. 200 to 1300) in English translation, with attention to the literary theory and criticism of the period. Discussion of the cultural context of dominant themes.

111. The Traditional Chinese Short Story
(4) STAFF

Prerequisite: upper-division standing.

This course examines the beliefs and values of traditional China through the medium of the short story. Rhetorical techniques of the Chinese author will be discussed as evidence of the author's and the audience's exploration of these same concepts in practice.

112A-B. Major Movements in Modern Chinese Literature
(4) LOWRY

Prerequisite: upper-division standing.

A. May Fourth movement. Focus on Lu Hsun, Lao She, Pa Chin. Studies in major intellectual and political movements in twentieth century China. Genres include fiction, poetry, drama, and memoirs by major writers. Lectures and readings in English.

B. Great Cultural Revolution. Works by dissident writers. Studies in major intellectual and political movements in twentieth century China. Genres include fiction, poetry, drama, and memoirs by major writers. Lectures and readings in English.

115A. Imagism, Haiku, and Chinese Poetry
(4) TU

Prerequisite: upper-division standing.

A comprehensive study of the nature and principles of the haiku and of classical Chinese poetry, their influence on the western imagists, and the theoretical and experimental achievements of the major imagist poets in the development of modern English poetry. Taught in English.

116. Survey of World Literatures in Chinese
(4) TU

Prerequisite: consent of instructor.

Recommended preparation: students should have at least third year Chinese reading ability.

Focus on analyzing literary works in Chinese from China, Taiwan, Hong Kong, Southeast Asia, America, and Europe as a comprehensive survey of the worldwide modern literature of Chinese diaspora.

121. Seminar on Taiwan Literature
(4) TU

Prerequisite: consent of instructor.

Recommended preparation: students should have advanced Chinese reading ability.

Focus on major issues of Taiwan literature from Japanese occupation (1895-1945) to the present with regard to the interaction of Taiwan's native cultures, China's grand tradition, and foreign influences during the historical development.

122A-B-C. Advanced Modern Chinese
(4-4-4) PAI, TU

Prerequisite: Chinese 6.

Advanced practice in grammar and composition.

124A-B. Readings in Modern Chinese Literature
(4-4) LOWRY

Prerequisite: upper-division standing.

Advanced readings in the Chinese language in fiction, drama, and poetry after 1919. Designed especially for returned students from the Education Abroad Program and students with advanced Chinese background.

125. Business Chinese
(4) STAFF

Prerequisites: Chinese 3; upper-division standing.

A course intended to equip the properly qualified student to conduct business in modern Chinese. Emphasis will be place on using appropriate vocabulary in realistic situations.

132A. Special Topics in Classical Chinese Poetry
(4) PAI, TU

Prerequisites: upper-division standing.

Topics focus on major themes in classical poetry with emphasis on Buddhist, Taoist, and symbolist poems in pre-modern period. Readings in English, lectures and discussions in English.

132B. Special Topics in Modern Chinese Poetry
(4) STAFF

Prerequisite: upper-division standing.

Topics focus on major trends of modern poetry developed in mainland China and Taiwan with particular attention to romanticism, realism, and modernism after contact with the West. Readings in Chinese, lectures and discussions in English.

133. Advanced Readings in Classical Prose
(2-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

Readings in various periods and genres (history, philosophy, the essay, prose narrative).

134. Advanced Readings in Classical Poetry
(2-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

Readings in the poetry of various periods before the twentieth century.

136. Advanced Readings in Vernacular Literature
(2-4) STAFF

Prerequisite: upper-division standing..

May be repeated for credit up to a maximum of 12 units but only 4 units may be applied toward the major.

Readings in novels of the Ming and Ch'ing periods.

137. Readings in Vernacular Drama
(4) STAFF

Prerequisite: upper-division standing.

Introduction to the major forms of traditional Chinese drama examining their distinctive features as literature and performance. Attention to issues of gender and belief in ghosts and the supernatural. Frequent use of film and audio materials.

139. Boundaries of the Self in Late Imperial Chinese Literature
(4) LOWRY

Prerequisite: upper-division standing.

Examination of the conventions of travel writing and essays to illuminate major cultural themes, such as the shift toward representation of daily life and new valuation of the individual and desire in the late imperial period. Readings in English.

140. Spaces in the Chinese City
(4) LOWRY

Prerequisite: upper-division standing.

A study of urban culture in selected periods. Examination of three public centers in Chinese cities: court, temple, and marketplace and representations of these spaces in various genres. Readings include literary and historical writings, paintings, and maps.

141. China in Transition Through Films
(4) PAI

Prerequisite: upper-division standing.

A study of social and political change in China since 1949 through films. Exploration of cinematic and literary techniques and how media reflect the impact of political campaigns such as the Cultural Revolution on the Chinese people. Taught in English.

145. Mythology and the Supernatural in Chinese Literature
(4) EGAN

Prerequisite: upper-division standing.

A study of the theme of the strange (kuai) in Chinese prose and poetry. Readings from early myths, ghost stories, demonic poetry, and a humorous folk epic about monsters. Attention to Chinese notions of the afterlife and aberration. Taught in English.

148. Historic Lives
(4) EGAN

Prerequisite: upper-division standing.

A study of selected notable lives from early and middle China for their contributions to Chinese history and literature. Subjects include Confucius, the First Emperor, the recluse Tao Yuanming, the ursurper Empress Wu, the Buddhist Sixth Patriarch, the "post-historian" Du Fu, and the female song-lyricist Li Qingzhao.

149. Literati Culture
(4) EGAN

Prerequisite: upper-division standing.

A study of literati (*wen-ren*) culture of the middle period, concentrating on the Sung dynasty. Attention to developments in literature, historiography, the visual arts, and philosophy. Readings (in translation) from Su Dongpo, Li Qingzhao, Sima Guang, and Zhu Xi.

150. The Language of Vernacular Chinese Literature
(4) YU

Prerequisites: Chinese 122A-B-C or 124.

May be repeated for credit to a maximum of 8 units.

Early Mandarin as represented in selections from vernacular Chinese fiction of the 16th through 18th centuries. Primarily concerned with the syntactical and semantic features employed in the reading selections. Also considers the issue of literary expression.

166A. Religion in Chinese Culture
(4) POWELL

Prerequisite: upper-division standing.

Same course as Religious Studies 166A.

A survey of major periods and themes in the history of the Confucian, Taoist, and Chinese Buddhist traditions, with particular emphasis on the differences and tensions among them and the contributions of each to the formation of the Chinese civilization.

166B. Taoist Traditions of China
(4) POWELL

Same course as Religious Studies 166B.

A study of the classical sources of Taoism, followed by a consideration of the varieties of religious practice which developed from those sources.

166C. Confucian Traditions: The Classical Period
(4) POWELL

Same course as Religious Studies 166C.

A treatment of the origins of Confucianism and of its development through the Han dynasty (to A.D. 200), with special attention to the variety of humane and spiritual disciplines which came to be called "Confucian." Emphasis on the interpretation of primary texts like the *Analects*, the *Mencius*, the *Hsun Tzu*, etc.

166E. The Flowering of Chinese Buddhism
(4) POWELL

Same course as Religious Studies 166E.

Recommended preparation: Religious Studies 164B.

A study of the distinctively Chinese forms of Buddhism which emerged in the sixth and seventh centuries A.D. Emphasis will be on the Hua-yen,

T'ien-t'ai, and Ch'an traditions, and on the features of those traditions which distinguish them most clearly from Indian Buddhism.

166F. Religious Literature in Chinese: Buddhist Texts
(4) POWELL

Prerequisite: consent of instructor.

Same course as Religious Studies 166F.

Recommended preparation: one year of formal study of classical Chinese.

Selected readings in important Buddhist texts which were either originally written in Chinese or translated into that language. Only texts not available in Western language translation are chosen. Attention not only to the content but to the grammatical, syntactical, and terminological peculiarities of Buddhist Chinese.

166G. Religious Literature in Chinese: Confucian Texts
(4) POWELL

Same course as Religious Studies 166G.

Recommended preparation: one year formal study of classical Chinese.

Readings in selected texts from the classical Confucian tradition (Chou dynasty), Han dynasty Confucianism, and the Neo-Confucian traditions of the Sung and Ming dynasties.

166H. Religious Literature in Chinese: Taoist Texts
(4) POWELL

Same course as Religious Studies 166H.

Recommended preparation: one year formal study of classical Chinese.

Readings in the *Lao Tzu (Tao-te-ching)* and the *Chuang Tzu* and their latter commentaries.

183. The Quest for Narrative in Late Imperial China
(4) POWELL

Same course as Religious Studies 183.

An exploration of quest themes, narrative forms and performative modes in the culture of Late Imperial China based on a reading of an English translation of the sixteenth-century masterpiece, *The Journey to the West (Monkey).*

184A-B. History of China
(4-4) FOGEL

Prerequisite: any lower-division course in history or upper-division standing.

Same course as History 184A-B. Not open for credit to students who have completed Chinese 186A-B or History 186A-B.

A. Ancient China to 589 CE

B. Sixth to seventeenth centuries

184T. History of Chinese Thought
(4) FOGEL

Prerequisite: upper-division standing.

Same course as History 184T. Not open for credit to students who have completed History 190C.

A study of the development of Chinese thought from Confucius to Mao Tse-tung.

184W. Chinese Historiography
(4) FOGEL

Prerequisite: upper-division standing.

Same course as History 184W. Not open for credit to students who have completed History 190W.

An examination of the major historical traditions of China over the past 2500 years: debates, texts, historians, patronage, impact of Marxism and communism (in the twentieth century).

186M. Chinese Marxism
(4) FOGEL

Prerequisite: upper-division standing.

Same course as History 186M. Not open for credit to students who have completed History 185M.

Introduction to the most influential system of thought in twentieth-century China. Examination of the background of Marxism's coming to China, its role in military thinking, education, feminism, the place of the intellectual, Mao's thought, etc.

184P. Proseminar in History of China
(4) JUDGE

Prerequisite: History 184A or 184B, or Chinese 184A or 184B.

Same course as History 184P. May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Undergraduate research in Chinese history.

197. Senior Honors Project
(4-8) STAFF

Prerequisites: open to senior majors only; consent of instructor.

Students must have a 3.0 overall grade-point average and a 3.5 grade-point average in the major. May be repeated for a total of 12 units.

An independent study course (1 to 3 quarters) directed by a faculty member with a carefully chosen topic and bibliography which will result in a documented project or a senior thesis.

198. Readings in Chinese
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Chinese.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated up to 12 units.

199. Independent Studies in Chinese
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Chinese.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Individual investigations in literary fields.

GRADUATE COURSES

201. Readings in Selected Texts
(2-4) STAFF

Prerequisites: ability to read Chinese at graduate level; consent of instructor. Normally graduate status is required.

Course will center on readings of Chinese texts; type and period to depend on needs of students and wishes of instructor. Research methods to be taught as appropriate.

211. Bibliography and Research Methodology
(4) STAFF

Prerequisite: one year of classical Chinese.

Introduction to the bibliography, reference works, and methodologies of Sinological research.

215. Seminar on Chinese Thought
(4) CHEN

Analyzing the texts and context of major Chinese schools of thought and Chinese thinkers.

216. Survey on World Literature in Chinese
(4) TU

Prerequisite: reading ability at or above third year Chinese, graduate standing.

Focus on analyzing literary works in Chinese from China, Taiwan, Hong Kong, Southeast Asia, America, and Europe as a comprehensive survey of the worldwide modern literature of Chinese diaspora.

221. Seminar on Taiwan Literature
(4) TU

Prerequisite: advanced Chinese reading ability.

Focus on major issues of Taiwan literature from Japanese occupation (1895-1945) to the present with regard to the interaction of Taiwan's native cultures, China's grand tradition and foreign influences during the historical development.

230. Chinese Theories of Literature
(4) TU

Survey of the major text of the Chinese critical tradition beginning with the *Major Preface* to the *Book of Songs* (first century ACE) through the important Ming (1368-1644), and Ch'ing (1644-1911) critics. Readings are in Chinese and English; lectures and discussions in English.

238. Traditional Chinese Historiography
(4) CHEN

Analyzing the sources and historiographical issues of major Chinese historical works before modern times.

240. Spaces in the Chinese City
(4) LOWRY

A study of urban culture in selected periods. Examination of three public centers in Chinese cities: court, temple, and marketplace and representation of these spaces in various genres. Readings include literary and historical writings, paintings, and maps.

249. Literati Culture
(4) EGAN

Prerequisite: Chinese 101A-B.

A study of literati (wen-ren) culture of the middle period, concentrating on the Sung dynasty. Attention to developments in literature, historiography, the visual arts, and philosophy. Readings (in Chinese and English) from Su Dongpo, Li Qingzhao, Sima Guang, and Zhu Xi.

250. The Language of Vernacular Chinese Literature
(4) YU

Prerequisite: graduate standing.

Early Mandarin as represented in selections from vernacular Chinese fiction of the sixteenth through eighteenth centuries. Primarily concerned with the syntactical and semantic features employed in the reading selections but will also consider the issue of literary expression.

265. Problems in the Study of Chinese Religions
(4) POWELL

Prerequisite: graduate standing.

Consideration of basic problems and methodological issues in the study of Chinese religions.

289M. Readings in Manchu
(4) ELLIOTT

Prerequisite: consent of instructor.

Same course as History 289M.

One of the Altaic languages, Manchu was widely employed throughout China during the Qing dynasty. The course introduces the Manchu script, grammar, and transcription, and trains students in reading and translating Manchu texts from the seventeenth and nineteenth centuries.

501. Apprentice Teaching
(2-4) STAFF

Prerequisites: graduate standing and consent of instructor. Employment in this department as teaching assistant or linguistic informant. These units do not count toward the graduate degree.

This course consists of supervised teaching practice in Chinese language.

596. Directed Reading and Research
(2-4) STAFF

Prerequisite: graduate standing.

Letter grade; minimum of 2 units per quarter.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

597. Preparation for Comprehensive Examinations.
(1-6) STAFF

Prerequisite: consent of graduate advisor.

No unit credit allowed toward degree.

Study for master's comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation
(1-6) STAFF

Prerequisites: graduate standing and consent of instructor.

Maximum of 12 units total. No unit credit allowed toward master's degree.

Instructor should be chair of the student's thesis committee.

East Asian Cultural Studies Courses

LOWER DIVISION

2. Introduction to the Study of East Asia
(4) STAFF

Introduction to the study of China, Japan, and Korea. A multi-disciplinary examination of defining issues in East Asian cultures. Study of topics in history, religion, and literature to identify enduring themes and concerns.

3. Introduction to Asian Religious Traditions
(4) POWELL

Same course as Religious Studies 3.

An introduction to the basic texts, institutions, and practices of the religious traditions of South Asia and East Asia.

20. Nature: East Asian Views
(4) GRAPARD

Same course as Religious Studies 20.

An introduction to the ways in which Chinese and Japanese cultures have conceptualized nature and humankind's place in it.

21. Zen
(4) GRAPARD

Same course as Religious Studies 21.

An introduction to the history and texts of major lineages of Ch'an Buddhism in China, and Zen Buddhism in Japan.

80. East Asian Civilization
(4) FOGEL

Same course as History 80.

A basic introduction to the history of East Asia focusing on the emergence and evolution of Chinese civilization and its impact upon the distinctive indigenous cultures of Japan, Korea, and Vietnam.

UPPER DIVISION

161B. Buddhist Meditation Traditions
(4) GRAPARD

Same as Religious Studies 161B.

A consideration of major forms of Buddhist meditation from both the South Asian and the East Asian traditions, with special attention given to determining the nature of meditation as a variety of religious experience.

164B. Buddhist Traditions in East Asia
(4) POWELL

Recommended preparation: background in Indian Buddhism.

Same course as Religious Studies 164B.

A consideration of the Buddhist tradition and its evolution in China, with emphasis on the changes which Buddhism underwent in its encounter with Chinese traditions and historical circumstances.

175. Sacred Geography in China and Japan
(4) GRAPARD, POWELL

Same course as Religious Studies 175.

A consideration of the cultural and cognitive dimensions of East Asian sacred geographies.

178. The Body Religious in Chinese Culture
(4) POWELL

Same course as Religious Studies 178.

The human body both as constituted by and constitutive of Chinese religion, culture, society, and geography. Neither purely philosophical nor biological, the course explores the understandings of the body as both subject and object of knowledge.

180A-B-C. History and Culture of East Asia
(4-4-4) FOGEL

Prerequisite: upper-division standing.

Same course as History 180A-B-C.

An introduction to the history and cultures of the major civilizations of East Asia: China, Japan, Korea, Vietnam. Emphasis on the shared historical experience of the region and cultural unity and diversity.

A. Prehistory to 600
B. 600-1600
C. 1600-1945

180P. Proseminar in East Asian History and Culture
(4) FOGEL

Prerequisite: History 80 or 87 or 180A or 180B or 180C or East Asian Cultural Studies 180A or 180B or 180C or upper-division standing.

Same course as History 180P.

Reading and research on selected issues in the history of East Asia with emphasis on the cultural interconnectedness of the region.

185. Translation in Theory and Practice
(4) NATHAN

Prerequisite: consent of instructor.

Recommended preparation: advanced reading command of Japanese or Chinese.

A consideration of twentieth century thinking about language and the function of translation with readings from Benjamin, Derrida, Steiner, Borges. A translation from Chinese or Japanese (or other language) into English is required.

189A. Vietnamese History
(4) FOGEL

Same course as History 189A. Not open for credit to students who have completed History 138A.

An introduction to the history of Vietnam and its place in East and Southeast Asia. Vietnamese history from antiquity through the early twentieth century.

GRADUATE COURSES

201AS. Advanced Historical Literature
(4) STAFF

Prerequisite: graduate standing.

Same course as History 201AS. May be taken more than once. Open to both M.A. and Ph.D. candidates.

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor.

210A-B. Pro-Seminar in Critical Studies on East Asia
(4-4) STAFF

Prerequisite: students should have satisfied lower-division preparation for Chinese, Japanese, or Asian studies major.

A two quarter in-progress course with grades for both quarters issued upon completion of 210B.

Critical analysis of the state of scholarship in various fields on China and Japan.

259. Topics in East Asian Buddhist Thought
(4) POWELL

Prerequisite: graduate standing.

Same course as Religious Studies 259.

A historical and critical analysis of selected issues in the development of Buddhist thought in China, Korea, and Japan.

281A-B. Sino-Japanese Cultural and Political Relations, 1850-1945
(4-4) FOGEL

Prerequisite: knowledge of Chinese and/or Japanese.

Same course as History 281A-B. Not open for credit to students who have completed History 289A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of East Asian Cultural Studies 281B.

Reading and research seminar on the interrelationship between Chinese and Japanese history from the first modern contacts until the end of World War II. Emphasis on cultural and political interactions.

281L. Japanese Sinology
(4) FOGEL

Prerequisite: minimum two years of Japanese.

Same course as History 281L.

Introduction to Japanese traditions of China studies; readings and discussions of various texts, and introduction to bibliographic tools.

285. Translation in Theory and Practice
(4) NATHAN

Prerequisite: advanced reading command of Japanese, Chinese, or other foreign language.

A consideration of twentieth century thinking about language and the function of translation with readings from Benjamin, Derrida, Steiner, Borges. A translation from Chinese or Japanese (or other language) into English is required.

Japanese Courses

LOWER DIVISION

1. Elementary Japanese
(5) NARAHARA

An introduction to modern Japanese. Students will develop basic communicative skills based on the fundamentals of grammar, vocabulary, and conversational expressions. Emphasis on both oral-aural proficiency and writing-reading skills. Introduction to Hiragana and Katakana syllabaries, and Kanji.

2. Elementary Japanese
(5) NARAHARA

Prerequisite: Japanese 1.

Continuation of Japanese 1.

3. Elementary Japanese
(5) NARAHARA

Prerequisite: Japanese 2 or 2S.

Continuation of Japanese 2.

4. Intermediate Japanese
(5) NARAHARA

Prerequisite: Japanese 3.

Continuation of Japanese 3. This course emphasizes the further development of both oral-aural proficiency and reading-writing skills with an intensive review of basic grammar as well as an introduction to more advanced grammar, vocabulary, and Kanji.

5. Intermediate Japanese
(5) NARAHARA

Prerequisite: Japanese 4.

Continuation of Japanese 4. This course emphasizes the further development of both oral-aural proficiency and reading-writing skills with an intensive review of basic grammar as well as an introduction to more advanced grammar, vocabulary, and Kanji.

6. Intermediate Japanese
(5) NARAHARA

Prerequisite: Japanese 5.

Continuation of Japanese 5. This course emphasizes the further development of both oral-aural proficiency and reading-writing skills with an intensive review of basic grammar as well as an introduction to more advanced grammar, vocabulary, and Kanji.

7N. Japanese for Native Speakers
(4) NARAHARA

Prerequisite: consent of instructor.

Designed for those with native or near-native Japanese speaking proficiency who need to work on their reading-writing skills. Through intensive training in written Japanese and review of grammar, it prepares students to join intermediate or advanced Japanese courses.

8A-B-C. Basic Conversational Japanese
(2-2-2) STAFF

Prerequisite: Japanese 4.

May be taken concurrently with Japanese 4-5-6.

Designed for those who have completed first year Japanese to continue developing basic communicative skills focusing on oral-aural proficiency.

22. Religious Narratives and Paintings of Japan
(4) GRAPARD

Same course as Religious Studies 22.

A survey and cultural analysis of the painted scrolls and texts related to historical records of

religious institutions in medieval and premodern Japan. Taught in English.

25. The Military in Modern Japanese Culture
(4) FRUHSTUCK

The cultural history of Japan's modern military organization is a history of flux. Examination of the underlying patterns of change, and their significance for defining the military's roles in the context of military-society relations or pre- and post-war Japan.

27. Conflicts and Tensions in Postwar Japanese Society
(4) FRUHSTUCK

Challenges the persistent view of Japan as a harmonious society. Conflicts are examined in regard to class and stratification, work and labor, education, gender, generation, minority groups, popular culture and everyday life.

32. Introduction to Japan
(4) STAFF

A topical survey of modern Japan covering material on the society and the culture. This course is intended to satisfy the non-specialist as well as to prepare students for upper-division courses on Japan.

UPPER DIVISION

101A. Pre-Modern Japanese
(4) IWASAKI

Prerequisite: Japanese 120C.

Not for students who have a Japanese high school education.

Sequence consists of an introduction to the grammar of classical Japanese, followed by reading in the classical, medieval, and early modern periods.

101B. Pre-Modern Japanese
(4) IWASAKI

Prerequisite: Japanese 101A.

Not for students who have a Japanese high school education.

Sequel to Japanese 101A. Combines the review of *Bungo* and introduction to *Kanbun* followed by reading in the classical, medieval, and early modern texts.

101C. Pre-Modern Japanese
(4) IWASAKI

Prerequisite: Japanese 101A.

Sequel to Japan 101A and optionally to 101B. Reviews *Bungo*, followed by readings in the classical, medieval, early modern, and *Meiji* texts.

110A. Survey of Japanese Literature: Classical
(4) STAFF

Prerequisite: upper-division standing.

A survey of Japanese literature focusing on the classical period from 800 to 1200. Readings, lectures, and discussions in English.

110B. Survey of Japanese Literature: Medieval
(4) STAFF

Prerequisite: upper-division standing.

A survey of Japanese literature from 1200 to 1600. Readings, lectures, and discussions in English.

110C. Survey of Japanese Literature: Early Modern
(4) STAFF

Prerequisite: upper-division standing.

A survey of Japanese literature from the 17th to the 19th centuries. Readings, lectures, and discussions in English.

111. Topics in Traditional Japanese Literature
(4) STAFF

Prerequisite: upper-division standing.

An exploration of selected themes and concerns expressed in Japanese literature before the twentieth century. Taught in English.

112. Survey of Modern Japanese Literature
(4) STAFF

Prerequisite: upper-division standing.

A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures, and discussions in English.

114A-B. Survey of Modern Japanese Literature
(4-4) NATHAN

Prerequisite: upper-division standing.

A survey of twentieth-century Japanese literature in English translation, from Soseki to Kenzaburo Oe. Major works of fiction will be closely examined as artful expressions of personal vision and windows to the society which formed them and which they reflect.

115. Topics in Twentieth-Century Japanese
(4) NATHAN

Prerequisites: upper-division standing; Japanese 112.

May be repeated for credit to a maximum of 8 units.

Topics to be considered will include: the Japanese novelist as intellectual and social critic; representations of the "self" and similarities and differences between the shosetsu and the western novel; and Japanese literature in and outside Japan.

119. Shugendo: Japanese Mountain Religion
(4) GRAPARD

Same course as Religious Studies 120.

Historical study of texts and practices of Japanese mountain ascetics (Yamabushi), and of their role in the formation of Japanese culture, from 700 to present.

120A-B-C. Advanced Japanese
(S-S-S) STAFF

Prerequisite: Japanese 6.

Course is designed to develop ability in reading contemporary Japanese essays, literary works, magazines, and newspapers. Emphasis is on solidifying student's grammatical foundation, mastery of Kanji and vocabulary and proficiency in writing and oral skills.

126. Business Japanese
(4) NARAHARA

Prerequisite: Japanese 120A.

A course designed to develop the Japanese language skills necessary for communication in business contexts. Emphasis on verbal, reading, and writing skills.

130A-B-C. Reading and Composition in Practical Japanese
(4-4-4) STAFF

Prerequisite: Japanese 120C.

Course aims to enhance reading and composition in contemporary practical Japanese. Class conducted in Japanese.

144. Grammar for Advanced Reading
(4) IWASAKI

Prerequisite: Japanese 6.

Not for students who have a Japanese high school education.

Complex sentence structure for reading Japanese.

145. Readings in Twentieth Century Japanese Literature
(4) IWASAKI

Prerequisite: Japanese 120C.

May be repeated for credit to a maximum of 8 units.

Introduces advanced students to selected short pieces of modern fiction and poetry in original Japanese.

146. Advanced Japanese Readings
(4) NATHAN

Prerequisite: consent of instructor.

Recommended preparation: Students should be able to read at fourth year level Japanese.

A selection of texts, including both fiction and non-fiction, by representative authors from the Meiji period to the present.

149. Traditional Japanese Drama
(4) SALTZMAN-LI

Prerequisite: upper-division standing.

Overview of the major forms of traditional Japanese drama examining their distinctive features and the ways in which they relate to one another and to general features of Japanese culture and literature. Frequent use of films and slides. Lectures and readings in English.

155. Genre in the Japanese Verbal Arts
(4) SALTZMAN-LI

Prerequisite: consent of instructor.

Recommended preparation: 8 units from Japanese 110A-B-C and 115.

Survey of Japanese verbal arts to define important genres, comprehend the process of genre birth and development, and examine attitudes towards the verbal arts as found in Japanese history. Comparison of Western and Japanese aspects of genre.

159. Japanese Cinema
(4) NATHAN

Prerequiste: upper-division standing.

Same course as Film Studies 120.

An introductory scrutiny of major Japanese directors: Mizoguchi, Ozu, Oshima, and Kurosawa. Close attention to their film composition, choices of subject and character, their ideas of the cinematic, and the relationship of cinema to Japanese culture and society.

160. Topics in Japanese Culture
(4) SALTZMAN-LI

Prerequisite: upper-division standing.

Exploration and definition through reading in English of interesting themes that have persisted in Japanese culture to the present.

162. Representations of Sexuality in Modern Japan
(4) FRUHSTUCK

The main ideologies guiding the establishment of various representations of sexuality from prewar scientific writings to contemporary popular culture.

164. Taisho Japan
(4) FRUHSTUCK

Examines the beginnings of a modern mass culture in early twentieth-century Japan. Central topics are political and social movement, the new woman and the modern girl, westernization, new media and censorship, modernism and nationalism.

167A. Religion in Japanese Culture
(4) GRAPARD

Prerequisite: a lower-division course in religious studies.

Same course as Religious Studies 167A.

A historical analysis of the major components of the classical and medieval religious systems of Japan, through investigation of texts, rituals, and institutions.

167B. Religion in Japanese Culture
(4) GRAPARD

Prerequisite: Japanese 167A or Religious Studies 167A; a lower-division course in religious studies.

Same course as Religious Studies 167B.

A historical analysis of the major components of premodern Japanese ideology through investigation of texts, institutions, and rituals.

167D. Shinto
(4) GRAPARD

Prerequisite: a lower-division course in religious studies.

Same course as Religious Studies 167D.

A systematic analysis of the principal institutions, texts, and rituals of the Shinto traditions of Japan, in historical perspective.

169. Seminar in Traditional Japanese Drama
(4) SALTZMAN-LI

Prerequisite: Japanese 149; upper-division standing.

Recommended preparation: knowledge of Japanese.

In-depth examinations of specific selected topics in traditional Japanese drama. Knowledge of Japanese required for readings and research for term papers.

170. Structure of Japanese
(4) NARAHARA

Prerequisite: upper-division standing.

Recommended preparation: completion of third year Japanese.

Linguistic analysis of Japanese from a language typology perspective.

197. Senior Honors Project
(4) STAFF
Prerequisites: open to senior majors only; consent of instructor.

Students must have a 3.0 overall grade-point average and a 3.5 in the major. May be repeated for a maximum of 8 units.

An independent study course (one to three quarters) directed by a faculty member with a carefully chosen topic and bibliography which will result in a documented project or a senior thesis.

198. Readings in Japanese
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Japanese.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated up to 12 units.

Guided reading in Japanese on a subject not covered in the regularly offered courses.

199. Independent Studies in Japanese
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Japanese.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Individual investigations in literary fields.

GRADUATE COURSES

201. Readings in Selected Texts
(2-4) STAFF
Prerequisites: ability to read Japanese at graduate level; consent of instructor. Normally graduate status is required.

Course will center on readings of Japanese texts; type and period to depend on needs of students and wishes of instructor. Research methods to be taught as appropriate.

205. Readings in Premodern and Meiji Texts
(4) IWASAKI
Prerequisite: graduate standing.

Introduces students to pre-war prose and poetry which contain classical and kanbun-style Japanese.

211. Bibliography and Research Methodology
(4) SALTZMAN-LI
Prerequisite: graduate standing.

Introduction to bibliographies, reference works, and methodologies of research in Japanese studies.

255. Genre in the Japanese Verbal Arts
(4) SALTZMAN-LI
Prerequisites: a total of 8 units from Japanese 110A-B-C and 115; graduate standing.

Survey of Japanese verbal arts to define important genres, comprehend the process of genre birth and development, and examine attitudes towards the verbal arts as found in Japanese history. Comparison of Western and Japanese aspects of genre.

264. Problems in the Study of Japanese Religion
(4) GRAPARD

An analysis of methodological issues raised by the study of Japanese religions: their relevance for the field of history of religions.

269. Seminar in Traditional Japanese Drama
(4) SALTZMAN-LI
Prerequisite: Japanese 149; graduate standing.

In-depth examinations of specific selected topics in traditional Japanese drama. Knowledge of Japanese required for readings and research for term papers.

501. Apprentice Teaching
(2-4) STAFF
Prerequisites: graduate standing and consent of instructor. Employment in this department as teaching assistant or linguistic informant.

These units do not count toward the graduate degree.

This course consists of supervised teaching practice in Japanese language.

596. Directed Reading and Research
(2-4) STAFF
Prerequisite: graduate standing.

Letter grade; minimum of 2 units per quarter.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

597. Preparation for Comprehensive Examinations
(1-6) STAFF
Prerequisite: consent of graduate advisor.

No unit credit allowed toward degree.

Study for master's comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation
(1-6) STAFF
Prerequisite: graduate standing.

S/U grading. No unit credit allowed toward degree.

For research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

Korean Courses

LOWER DIVISION

1. Elementary Korean
(5) STAFF

Not open for credit to students who have taken Asian Studies 1.

The beginning course in Korean. The student acquires a basic knowledge of the grammar, a limited general vocabulary, correct punctuation, and an ability to read and understand simple texts. Weekly laboratory assignments support and enhance classroom learning.

1N. Korean for Native Speakers
(5) STAFF
Prerequisite: consent of instructor.

A course intended for native Korean speakers who wish to learn to read and write Korean. Content is similar to Korean 1 with less emphasis on developing oral skills.

2. Elementary Korean
(5) STAFF
Prerequisite: Korean 1 or Asian Studies 1.

Not open for credit to students who have taken Asian Studies 2.

Continuation of Korean 1.

2N. Korean for Native Speakers
(5) STAFF
Prerequisite: consent of instructor.

A course intended for native Korean speakers who wish to learn to read and write Korean. Content is similar to Korean 2 with less emphasis on developing oral skills. Continuation of Korean 1N.

3. Elementary Korean
(5) STAFF
Prerequisite: Korean 2 or Asian Studies 2.

Not open for credit to students who have taken Asian Studies 3.

Continuation of Korean 2.

3N. Korean for Native Speakers
(5) STAFF
Prerequisite: consent of instructor.

A course intended for native Korean speakers who wish to learn to read and write Korean. Content is similar to Korean 3 with less emphasis on developing oral skills. Continuation of Korean 2N.

4. Intermediate Modern Korean
(5) STAFF
Prerequisite: Korean 3 or Asian Studies 3.

Not open for credit to students who have taken Asian Studies 4.

Continuation of Korean 3.

5. Intermediate Modern Korean
(5) STAFF
Prerequisite: Korean 4 or Asian Studies 4.

Not open for credit to students who have taken Asian Studies 5.

Continuation of Korean 4.

6. Intermediate Modern Korean
(5) STAFF
Prerequisite: Korean 5 or Asian Studies 5.

Not open for credit to students who have taken Asian Studies 6.

Continuation of Korean 5.

30A-B-C. Korean for Native Speakers
(4) STAFF

Reading and speaking of modern Korean writings for students with a basic native ability.

82. Korean Culture and Society
(4) PAI

Same course as History 82.

Introduction to the various features of traditional Korean civilization and society covering its history (prehistory to the end of Japanese occupation in 1945) and topics in anthropology (kinship, inheritance, customs, religion, rice production, and peasant economy).

UPPER DIVISION

113. Korean Literature Survey
(4) PAI

A survey of Korean literature from ancient times to the contemporary period covering popular novels, women's literature, and travelogues over the centuries. The present period is covered by film presentations.

120. Korean Culture and Society
(4) PAI
Prerequisite: Anthropology 2.

Study of late, traditional, and contemporary Korea. Discussion includes socio-economic organization, religion, folk art and literature, culture change, and politics of culture.

121A-B-C. Advanced Korean
(5-5-5) STAFF
Prerequisite: Korean 6.

A course designed to develop ability in reading contemporary Korean essays, literary works, magazines, and newspapers. Emphasis on solidifying students' grammatical foundation, mastery of Hanja and vocabulary, and proficiency in writing and oral skills

182A. Korean History and Civilization: Part I
(4) PAI

Same course as History 182A.

The history of Korea from prehistory to the rise of states and kinship, Buddhism, Confucianism, cultural interaction with China, Japan, and the Mongols.

182B. Korean History and Civilization: Part II
(4) PAI

Same course as History 182B.

Survey of the history of Korea from the Yi dynasty to the present day. Topics include Yangban society, Japanese invasions, the Korean War, and political division.

182P. Proseminar in Korean History
(4) PAI

Same course as History 182P. May be repeated for credit to a maximum of 8 units.

Undergraduate research seminar in Korean history.

199. Independent Studies in Korean
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in Korean.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all

98/99/198/199/199RA courses combined.
Individual investigations in literary fields.

Related Courses in Other Departments

Arabic: See Religious Studies 10A-F.
Chinese: See Religious Studies 166F-H.
Hindi: See Religious Studies 11A-F.
Sanskrit: See Religious Studies 159A-L.
Tibetan: See Religious Studies 30A-B-C.

Ecology, Evolution, and Marine Biology

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Faculty

Alice L. Alldredge, Ph.D., UC Davis, Professor (marine biology)

Mark A. Brzezinski, Ph.D., Oregon State University, Professor (biological oceanography)

David J. Chapman, Ph.D., UC San Diego, Professor (phycology, biochemical evolution)

James J. Childress, Ph.D., Stanford University, Professor (ecological physiology)

Peter M. Collins, Ph.D., University of London, Professor (endocrinology)

Scott D. Cooper, Ph.D., University of Wisconsin, Professor (aquatic ecology and limnology)

John A. Endler, Ph.D., University of Edinburgh, Professor (population and ecological genetics)

Steven D. Gaines, Ph.D., Oregon State University, Professor (marine community ecology, biostatistics)

Scott Hodges, Ph.D., UC Berkeley, Assistant Professor (plant evolution)

Sally J. Holbrook, Ph.D., UC Berkeley, Professor (population ecology)

Robert S. Jacobs, Ph.D., Loyola University, Professor (pharmacology)

Armand M. Kuris, Ph.D., UC Berkeley, Professor (parasitology, marine ecology)

Bruce E. Mahall, Ph.D., UC Berkeley, Professor (plant ecology)

Susan J. Mazer, Ph.D., UC Davis, Associate Professor (plant evolution)

John M. Melack, Ph.D., Duke University, Professor (zoology and limnology)

William W. Murdoch, Ph.D., Oxford University, Professor (population ecology)

Roger M. Nisbet, Ph.D., University of St. Andrews, Professor (theoretical population ecology)

Barbara B. Prezelin, Ph.D., Scripps Institution of Oceanography, Professor (marine biology)

Omer J. Reichman, Ph.D., Northern Arizona University, Professor (behavioral ecology)

William Rice, Ph.D., Oregon State University, Professor (evolutionary genetics, biological statistics)

Stephen I. Rothstein, Ph.D., Yale University, Professor (evolutionary biology, ecology, ethology)

Joshua P. Schimel, Ph.D., UC Berkeley, Associate Professor (microbial ecology, soil biology, ecosystem ecology)

Russell J. Schmitt, Ph.D., UC Los Angeles, Professor (marine community ecology and population)

Allan Stewart-Oaten, Ph.D., Michigan State University, Professor (mathematical biology, statistics)

Raul K. Suarez, Ph.D., University of British Columbia, Associate Professor (comparative biochemistry and physiology)

Samuel S. Sweet, Ph.D., UC Berkeley, Associate Professor (vertebrate morphology)

Barry D. Tanowitz, Ph.D., UC Santa Barbara, Lecturer (evolutionary biology)

Robert R. Warner, Ph.D., Scripps Institution of Oceanography, Professor (marine ecology)

Emeriti Faculty

Daniel B. Botkin, Ph.D., Rutgers University, Professor Emeritus

James F. Case, Ph.D., Johns Hopkins University, Professor Emeritus

Joseph H. Connell, Ph.D., Glasgow, Professor Emeritus

Demorest Davenport, Ph.D., Harvard University, Professor Emeritus

Barbara B. DeWolfe, Ph.D., UC Berkeley, Professor Emerita

Alfred W. Ebeling, Ph.D., UC Los Angeles and Scripps Institution of Oceanography, Professor Emeritus

John R. Haller, Ph.D., UC Los Angeles, Professor Emeritus

Garrett Hardin, Ph.D., Stanford University, Professor Emeritus

Robert W. Holmes, Ph.D., Oslo, Professor Emeritus

W. Neil Holmes, D.Sc., Ph.D., Liverpool, Professor Emeritus

Maynard F. Moseley, Ph.D., University of Illinois, Professor Emeritus

Elmer R. Noble, Ph.D., UC Berkeley, Professor Emeritus

Dale M. Smith, Ph.D., Indiana University, Professor Emeritus

Robert K. Trench, Ph.D., UC Los Angeles, Professor Emeritus (biology)

Adrian M. Wenner, Ph.D., University of Michigan, Professor Emeritus

Affiliated Faculty

Stanley M. Awramik, Ph.D. (Geological Sciences)

James P. Kennett, Ph.D. (Geological Sciences)

Bruce Tiffney, Ph.D. (Geological Sciences)

The Department of Ecology, Evolution, and Marine Biology (EEMB) offers the bachelor of science degree in four departmental majors—aquatic biology, ecology and evolution, physiology, and zoology. In addition, it cooperates with the Department of Molecular, Cellular, and Developmental Biology in offering the interdepartmental biological sciences major, with both B.A. and B.S. objectives. The department offers graduate programs leading to the degrees of master of arts and doctor of philosophy, with emphasis in ecology, evolution, and marine biology. In addition, a wide range of courses is available to all undergraduates for elective enrollment or for the support of their preparation for degrees in other departments or programs.

Intensive, quarter-long field courses, including the White Mountain Research Supercourse and the Education Abroad Program's tropical biology program in Costa Rica, are available to selected students. A variety of hands-on work and research experiences are available through internships and directed independent study projects, including research at University of California Natural Reserve System sites throughout California. In addition, students can obtain training in the biological sciences at institutions throughout the world through the Education Abroad Program.

Many students in the Department of Ecology, Evolution, and Marine Biology prepare for entry into graduate or professional schools. Students should become familiar with the requirements of several institutions offering work in the specialty that interests them, and then discuss their programs with their advisor. In general, students preparing for careers in medicine, dentistry, veterinary medicine, pharmacy, and nursing select biological sciences, physiology, or zoology as their major. All of the EEMB majors provide suitable preparation for further study in agriculture, forestry, and wildlife and water management.

Students with a bachelor's degree in any of the EEMB majors who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

The department undergraduate academic advisor is available for counseling on matters such as major requirements, schedule planning, course substitutions, petitions, and career and graduate school information. Three faculty members serve each year as graduate advisors. The graduate program assistant helps graduate students in all matters related to their graduate study. Department publications are available from the undergraduate advisor and the graduate program assistant.

Senior Honors Program

Students with outstanding academic records in biological sciences are encouraged to apply for

the senior honors program early in the fall quarter of the senior year. The honors program centers on an independent research project carried out in one of the departmental research groups (EEMB or MCDB 199), and the preparation of a written report or thesis. Eligibility requirements and applications are available from the undergraduate advisor.

Undergraduate Program

Students are normally expected to complete all courses required in preparation for the major by the end of their sophomore year, but physics may be delayed until the junior year if necessary. Students with strong high school backgrounds are urged to complete their basic preparation in general chemistry and mathematics during their freshman year. Students with weak mathematics preparation should make up this deficiency by completing intermediate algebra and trigonometry by correspondence through University Extension, preferably during the summer preceding enrollment at UCSB, or by completing Mathematics 15 at UCSB. As the requirements suggest, each major in the department is designed to emphasize a different area in biology.

Upper-division major courses offered on the P/NP-only basis may be taken for major credit to a maximum of 8 units total in any combination for a B.S. or 4 units for a B.A. All other courses for the major, both preparation and upper-division, must be taken for letter grades.

Pre-Biology

Students are not admitted directly into the following majors: Aquatic Biology B.S., Biological Sciences B.A. or B.S., Ecology and Evolution B.S., Physiology B.S., and Zoology B.S. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing in one of these majors only after fulfilling the pre-major course and grade requirements listed below. *Note: Completion of the pre-major does not fully satisfy the preparation for the major requirements for any of the majors.* Students should review the full requirement sheet for the major they intend to declare and plan their schedules accordingly. Also note that acceptance into the pre-major does not guarantee admission to full major status.

Students may petition for advancement to full major status in any one of the majors as soon as they have completed the required minimum of twelve courses with a 2.0 or higher grade-point average in sections A, B, and C. At the time of the petition, they must also have a 2.0 or higher grade-point average in all courses attempted toward the major (preparation and upper-division). The P/NP grading option is not allowed for any pre-major course. All must be completed on a letter-grade basis.

A. The following with a 2.0 or higher grade-point average: MCDB 1A-B and EEMB 2 and 3.

B. The following with a 2.0 or higher grade-point average: MCDB 1AL, either MCDB 1BL or EEMB 2L, and EEMB 3L

C. Five courses from the following with a 2.0 or higher grade-point average:

1. General Chemistry: Chemistry 1A or 2A, 1B or 2B, 1C or 2C. *(The entire three-quarter series and laboratories are required for all five majors.)*

2. Organic Chemistry: Chemistry 107A or 130A, 107B or 130B, 108 or 130C. *(Requirements vary among the five majors. Not required for Ecology and Evolution or Zoology.)*

3. Calculus: Mathematics 3A or 34A, 3B or 34B

4. Statistics: EEMB 30 or PSTAT 5A

5. Physics: 6A *(Additional physics is required for all five majors.)*

NOTE: Many upper-division EEMB and MCDB courses require a C or better in *each* prerequisite course. See individual course listings.

Bachelor of Arts—Biological Sciences

UCSB offers both a bachelor of arts (B.A.) and a bachelor of science (B.S.) degree in biological sciences. The B.A. degree is intended to provide flexibility in curriculum planning for students interested in obtaining a degree in biology accompanied by a broader background in the liberal arts. Either degree is acceptable to most graduate and professional schools. Students are encouraged to seek advice from biology faculty and academic advisors regarding which degree option is most appropriate to their career goals.

Students are not admitted directly into the biological sciences major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement. Note also that a single course, though listed in more than one area, can satisfy only one requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B, and either 107A-B or 130A-B; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL.

Upper-division major. Thirty-six upper-division units in biological sciences, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184; MCDB 121, 182, 183, 184. In addition, no more than 4 units of the following courses combined will apply: EEMB 185-199; MCDB 185-199.

A. Genetics: MCDB 101A (MCDB 101B strongly recommended for students taking 101A) or EEMB 129

B. Physiology: One course or course sequence from MCDB 111, 114, 117; EEMB 141, 143, 154, 155, 156

C. Development and Cell Biology or Biochemistry and Molecular Biology: one course or course sequence from MCDB 103, 108A, 110, 112, 114 (if not used in area B), 115, 118, 133, 134

D. Ecology or Evolution: One course or course sequence from EEMB 108, 109 (or Geology

Barbara Prezelin

PROFESSOR, ECOLOGY, EVOLUTION & MARINE BIOLOGY

Barbara Prezelin, professor of ecology, evolution, and marine biology, grew up in the Northwest amid tales of the sea and three-masted sailing ships. Combining her love for the ocean with a passionate scientific curiosity, this biological oceanographer has spent the last 25 years traveling from the North Atlantic Ocean to the Sargasso Sea and from California to Antarctica seeking answers to questions about the role plant biology plays in ocean food web dynamics, biogeochemical cycling, and climate changes.

"What I do best is take students to the sea."

"What I do best is take students to the sea," she explains. More than 100 undergraduates have accompanied Prezelin on her research trips, all participating in oceanography fieldwork.

"I've been to a lot of regions, and every one is as different and special as the ships that get us there and the teams of researchers who work on them to achieve the goals of the program. On every trip there are undergraduate researchers who contribute greatly to the success of the cruise and who add a scientific enthusiasm that is infectious. They come back tired and happy and with a real sense of purpose about what they want to do."

148), 113-113L, 120, 131 (or Geology 121), 135, 137 (or Geology 141), 138, 140, 145C

E. Diversity of Form and Structure: One course or course sequence from EEMB 107, 111, 112, 113-113L (if not used in D above), 116, 134; MCDB 131, 137

F. Electives: Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology to bring unit total to 36.

Bachelor of Science—Aquatic Biology

The aquatic biology major provides students with interests in marine biology, biological oceanography, limnology, marine and freshwater ecology, and population biology of aquatic organisms with an opportunity to gain a general background in these subject areas.

Students are not admitted directly into the aquatic biology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement. Note also that a single course, though listed in more than one area, can satisfy only one requirement. Such courses are identified with an asterisk (*).

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; two of the following courses or course sequences: Chemistry 6A-107A, 6B-107B, 6A-130A, 6B-130B, 101; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30, Mathematics 3C (acceptable but not recommended); Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight upper-division units in biological sciences, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183; MCDB 182, 183, 184. In addition, no more than 8 units of the following courses combined will apply: EEMB 184-199, MCDB 185-199. Finally, a maximum of 16 units may be completed in courses outside of the EEMB department.

A. EEMB 145A-B-C

B. One course or course sequence from each of the following:

1. Genetics: EEMB 129 or MCDB 101A

2. Ecology: EEMB 120 or 179

3. Physiology: EEMB 143-143L*, 154, 155, 156; MCDB 111, 114, 117

4. Evolution: EEMB 108, 109 (or Geology 148), 113-113L, 114, 131 (or Geology 121), 135, 136-136L (or Geology 111-111L), 138

C. Aquatic Biology: Three courses from the following, including at least one laboratory course (underlined): EEMB 106, 111, 112, 116, 134, 143*, 143L*, 145AL, 145BL, 145CL, 147, 148, 148L, 149 (or MCDB 149), 150, 151, 152 (or Environmental Studies 152), 159, 163, 170, 185 (4 units maximum), Geology 162*

D. Physical Environment: One course from: Geography 104, 112, 116-116L, 134, 136, 158, 162A-AL, 163; Geology 161, 162*, 163, 164A, 164B, 165, 166, 171

E. Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology and Department of Molecular, Cellular, and Developmental Biology or from areas B, C, and D above to bring total units to 48.

Bachelor of Science—Biological Sciences

UCSB offers both a bachelor of arts (B.A.) and a bachelor of science (B.S.) degree in biological sciences. The B.S. degree is intended for those students desiring a more focused and intensive curriculum in biology, including the development of laboratory skills. Either degree is acceptable to most graduate and professional schools. Students are encouraged to seek advice from biology faculty and academic advisors regarding which degree option is most appropriate to their career goals.

Students are not admitted directly into the biological sciences major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B and either 107A-B or 130A-B; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight units, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184; MCDB 121, 182, 183, 184. In addition, no more than 8 units of the following courses combined will apply: EEMB 185-199, MCDB 185-199.

A. Genetics: MCDB 101A and MCDB 101B (MCDB concentration) or EEMB 129 and EEMB 130 (EEMB concentration)

B. One course or course sequence from each of the following. *Note: Courses listed in more than one section can be applied to only one section.*

1. Physiology: MCDB 111, 114, 117, 126A, 132; EEMB 141, 143, 151, 154, 155, 156

2. Developmental and cell biology: MCDB 103, 112, 114, 115, 118, 119, 133,

3. Biochemistry and molecular biology: MCDB 108A, 110, 126B, 126C, 133, 134

4. Ecology: EEMB 120, 138, 140, 145C

5. Evolution: EEMB 108, 109 (or Geology 148), 113-113L, 131 (or Geology 121), 135, 136-136L (or Geology 111-111L), 137 (or Geology 141)

6. Diversity of form and function: EEMB 106, 107, 111, 112, 113-113L, 115, 116, 134; MCDB 131, 137

7. Laboratory: Either one of the underlined courses from sections 1-6 above or one of the following: MCDB 101L, 103L, 109L, 112L, 126AL (or EEMB 126AL), 126BL, 131L, 132L, 133L, 140L; EEMB 107L, 120AL-BL, 140L, 143L, 148L, 170

C. Electives: Additional upper-division courses offered with the Department of Ecology, Evolution and Marine Biology and the Department of Molecular, Cellular and Developmental Biology to bring the total to 48 units.

Bachelor of Science—Ecology and Evolution

The ecology and evolution major provides a solid foundation in the study of interactions among organisms, and of their relations to the environment. Following completion of the core sequence, students may elect either an ecology or evolution concentration, or may devise their own program in consultation with a faculty advisor. This is the appropriate major for the field-oriented biologist and for students interested in graduate work in plant or animal population biology, ecology, or evolutionary biology.

Students are not admitted directly into the ecology and evolution major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement. Note also that a single course, though listed in more than one area, can satisfy only one requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; Mathematics 3A-3B or 34A-34B and one of the following: PSTAT 5A or EEMB 30 (Mathematics 3C acceptable but not recommended); Physics 6A-AL-B-BL-C-CL. *Note: Organic Chemistry may be required by some graduate or professional schools. Consult with the advisor.*

Upper-division major. Forty-eight upper-division units are required, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 182, 183, 184. In addition, no more than 8 units of the following courses apply: EEMB 185-199, MCDB 185-199. Finally, a maximum of 16 units may be completed through courses outside of the EEMB Department.

Note: Courses identified with an asterisk (*) are listed in more than one area, but they may be applied to only one area.

A. Genetics: EEMB 129-130* or MCDB 101A-B

B. Ecology: EEMB 120

C. Evolution: EEMB 131 (or Geology 121)

D. One course from D1 or D2:

1. Ecology concentration: EEMB 125, 140, 152

(or Environmental Studies 152), 171 (or Environmental Studies 171), 179

2. Evolution concentration: EEMB 130* or 135

E. Physiology: EEMB 141, 143, 154, 155, 156; MCDB 111, 117

F. Animal diversity: EEMB 106, 107, 108, 109 (or Geology 148), 111, 112, 113-113L, 116, 133 (or Environmental Studies 133)*, 136-136L (or Geology 111-111L)

G. Plant diversity: EEMB 103A, 127, 133 (or Environmental Studies 133)*, 137 (or Geology 141); Geography 167, 170-170L*; MCDB 137

H. Physical environment: EEMB 145A; Geography 104, 110, 112, 114A-AL (or Environmental Studies 114A-AL), 162A-AL (or Environmental Studies 162A-AL), 170-170L*; Geology 164A

I. Electives: Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology or courses from areas F, G, or H above to bring the total in the major to 48.

Bachelor of Science—Physiology

Physiology is a branch of biology dealing with the processes, activities, and phenomena characteristic of living organisms. The physiology major is designed to provide an understanding of the integrated functioning of tissues and organs in whole organisms. Regulatory mechanisms are considered at the cellular and molecular level, and in the context of an organism's adaptation and responsiveness to its environment.

Students are not admitted directly into the physiology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; Chemistry 6A-B and either 107A-B-108 or 130A-B-C; Mathematics 3A-B or 34A-B and one of the following: PSTAT 5A or EEMB 30 (Mathematics 3C acceptable but not recommended); Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight upper-division units are required, distributed as follows.

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 182, 183, 184. In addition, no more than 8 units of the following courses apply: EEMB 185-199, MCDB 185-199. Finally, a maximum of 16 units may be completed through courses outside of the EEMB and MCDB Departments.

Note: Instructor approval is required for admission into any upper-division psychology courses. A maximum of 8 units of psychology courses can be applied.

A. One course or course combination from Regulatory Biology: EEMB 143-143L, 154, 155, 156, 160; MCDB 117; Psychology 113, 137

B. Genetics: EEMB 129

C. Cell Biology: MCDB 103

D. Biochemistry: MCDB 108A-B or Chemistry 142A-B

E. One course from Structure and Function: EEMB 108, 112, 115, 116, 131

F. Additional courses offered within the Department of Ecology, Evolution and Marine Biology and the Department of Molecular, Cellular and Developmental Biology or courses from areas A and E above to bring the total units in the upper-division major to 48. The following courses are recommended: EEMB 134, 141, 151, 164-164L; MCDB 114.

Bachelor of Science—Zoology

The zoology major is designed to provide an understanding of animal structure and diversity, evolutionary relationships, functional systems, and environmental relationships, with an option of specialization in either organismal or population biology.

Students are not admitted directly into the zoology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; Mathematics 3A-B or 34A-B and one of the following: PSTAT 5A or EEMB 30 (Mathematics 3C acceptable but not recommended); Physics 6A-AL-B-BL-C-CL.

Note: The following courses do not count toward upper-division major credit: EEMB 183, MCDB 182, 183, 184. In addition, no more than 8 units of the following courses apply: EEMB 184-199, MCDB 185-199. Finally, a maximum of 16 units may be completed through courses outside of the EEMB Department.

Note: Organic Chemistry may be required by some graduate or professional schools. Consult with an advisor.

Upper-division major. Forty-eight upper-division units are required, distributed as follows:

A. Genetics: EEMB 129 or 130 or MCDB 101A

B. One course from Physiology: EEMB 143, 154, 155, 156; MCDB 111, 114

C. Two courses from Ecology, Evolution, or Development: EEMB 109 (or Geology 148), 120, 130, 131 (or Geology 121), 135, 138, 152 (or Environmental Studies 152), or MCDB 112

D. Three courses from Diversity and Systematics: EEMB 106, 107-107L, 108, 111, 112, 113-113L, 116, 147, 163, 171 (or Environmental Studies 171)

E. Ecology and Evolution Enrichment. One course from the following list or one additional course from areas C. EEMB 136-136L (or Geology 111-111L), 145A, 145B, 145C, 146, 148, 149 (or MCDB 149), 159, 170.

F. One course in Plant Biology: EEMB 103A, 115, 134, 135, 140, 141.

G. Laboratory: an underlined course completed in areas A-E or one of the following: EEMB 140L, 143L, 145AL, 145BL, 145CL, 148L; MCDB 112L

H. Electives: Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology or from areas C-F above or from the following list: Chemistry 107A, 107B, 108, 130A, 130B, 130C; Anthropology 105, 121, 121T, 153T; Geography 104, 167; Geology 120, 164A; Linguistics 185; MCDB 101B, 103, 133, 134 to bring the total upper-division units in the major to 48.

Graduate Program

The Department of Ecology, Evolution, and Marine Biology (EEMB) offers graduate studies leading to the master of arts and doctor of philosophy degrees. Candidates for graduate degrees must meet university degree requirements found in the chapter, "Graduate Education at UCSB," as well as departmental requirements.

Admission

Applicants must fulfill general requirements for admission to graduate status. In addition, the scores of the Graduate Record Examination (GRE) general test are required of all applicants to the graduate program. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper-based test or 213 when taking the computer-based test, taken within two years of their application to UCSB.

Applicants to the department must be accepted by a major professor with whom they wish to work. Therefore, applicants are encouraged to contact individual faculty members whose research interests coincide with their own.

Applications are considered for fall admission and should be received with all supporting materials by December 15.

Requirements for the M.A.

A candidate for the master's degree must fulfill, in addition to general university requirements, the minimum lower-and upper-division requirements or their equivalents for the major in their field of emphasis. Students admitted with deficiencies must rectify them early in their graduate studies.

A major area of study must be selected from the list of specialized areas presented below following the section titled, "Requirements for the Ph.D." A minor area of study may be selected from this list or from an appropriate discipline in another department. Two plans of study are available for the M.A.

Under Plan 1 (thesis), a minimum of 30 units and a thesis are required. The units may be taken in graduate or upper-division courses offered by the department; at least 20 units must be in the 200 and 500 series, excluding

500, 501, 502, 597 and 598. No more than half the graduate-level units may be in 596 courses. Courses outside the department may be substituted upon written approval of the student's advisory committee. No unit credit is allowed for the thesis.

Under Plan 2 (comprehensive examination), a minimum of 36 units of upper-division and graduate courses offered by the department are required, at least 24 of which must be in the 200 and 500 series, excluding 500, 501, 502, 597 and 598. No more than half the graduate-level units may be in 596 courses. Courses outside the department may be substituted upon written approval of the student's advisory committee. The comprehensive examination will cover a major and a minor area of study as described above.

Individuals may apply to an M.A./Ph.D. program. Students in the program may enter the Ph.D. program after their master's-level studies are complete if their M.A. work indicates an ability to conduct research at the Ph.D. level. Entry into the Ph.D. program requires written support by the student's potential Ph.D. advisor. The graduate committee will review each request in consultation with the student's named potential advisor. If entry into the Ph.D. program is approved, the student should consult with the graduate advisor regarding Ph.D. program requirements.

Requirements for the Ph.D.

Candidates for the doctor of philosophy degree in EEMB must normally have completed a bachelor's degree in one of the biological sciences, with a preparation deemed equivalent to that required for the bachelor's degree from UCSB. Students who are admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses.

All doctoral candidates must qualify for and hold a teaching assistantship for the equivalent of two quarters as part of the preparation for the Ph.D. degree; pass a set of written qualifying examinations administered by the department and the oral qualifying examination administered by the doctoral committee; complete a doctoral dissertation under the general supervision of a committee; and defend their dissertation in a final oral examination. With the approval of the candidate's doctoral committee, a scheduled departmental seminar may be substituted in lieu of the final oral examination.

Doctoral students select, with the approval of their advisory committee, two areas of study. One area of study must be selected from the list below; the other may be selected from the list, or from an appropriate discipline in other departments. Students must then pass a written comprehensive exam in each of the two areas of study. In addition, the oral qualifying examination must be taken before the end of the ninth quarter following matriculation in the Graduate Division.

1. Ecology with Ecosystem, Evolutionary, Physiological, Plant Community, or Population emphases
2. Algal Physiology, Ecology, and Systematics
3. Behavioral Ecology
4. Biology of Arthropods
5. Biology of Deep Sea Animals
6. Biological Oceanography
7. Bioluminescence
8. Ichthyology
9. Invertebrate Biology
10. Limnology
11. Macroevolution
12. Mathematical Biology
13. Parasitology
14. Plant Systematics and Evolution (Biochemical Systematics, Biosystematics, Taxonomy)
15. Population Genetics
16. Stream Ecology
17. Vertebrate Evolution, Morphology, and Systematics
18. Comparative Physiology
19. Endocrinology
20. Pharmacology

Ecology, Evolution, and Marine Biology Courses

LOWER DIVISION

2. Introductory Biology II—Ecology and Evolution
(2) RICE, STAFF

Prerequisites: MCDB 1A; and Chemistry 1A-B-C.

Not open for credit to students who have completed Biology 4B or EEMB 4B or 5B or MCDB 4B or 5B. Lecture, 2 hours.

Introduction to population and community ecology, and evolution. (W)

2L. Introductory Biology Laboratory II
(1) STAFF

Prerequisites: MCDB 1A; concurrent enrollment in EEMB 2 and MCDB 1B.

Same course as MCDB 1BL. Not open for credit to students who have completed Biology 4B or EEMB 4B or 5BL or MCDB 4B or 5BL. Laboratory, 3 hours.

Laboratory investigations illustrate basic principles of animal and plant physiology, ecology, and evolution. (W)

2Z. Selected Topics from EEMB 2
(1) STAFF

Prerequisite: consent of department.

Not open for credit to students who have completed Biology 4BZ or EEMB 4BZ or 5BZ or MCDB 4BZ or 5BZ. Lecture, 1-4 hours.

Designed for transfer students who have completed part of EEMB 2 or MCDB 1B through transfer work. Topics will be selected by the department, as appropriate, to fulfill the introductory biology requirement at UCSB. (W)

3. Introductory Biology III
(3) ALLDREDGE, SCHIMEL, STAFF

Prerequisites: MCDB 1A-B, EEMB 2, and Chemistry 1A-B-C.

Not open for credit to students who have completed Biology 4C or EEMB 4C or 5C. Lecture, 4 hours.

Introduction to the major groups of microbes, plants, and animals. (S)

3L. Introductory Biology Laboratory III
(1) STAFF

Prerequisites: MCDB 1A; EEMB 2 and MCDB 1B; and concurrent enrollment in EEMB 3.

Not open for credit to students who have completed Biology 4C or EEMB 4C or 5CL. Laboratory, 3 hours.

The diversity of microbes, plants, and animals is examined using living and preserved materials. (S)

3Z. Selected Topics from EEMB 3
(1-2) STAFF

Prerequisite: consent of department.

Not open for credit to students who have completed Biology 4CZ or EEMB 4CZ or 5CZ. Lecture, 1-4 hours.

Designed for transfer students who have completed part of EEMB 3 through transfer work. Topics will be selected by the department, as appropriate, to fulfill the introductory biology requirement at UCSB. (S)

4FS. Freshman Seminar
(1) BRZEZINSKI

Not open for credit to students who have completed Biology 4FS. Same course as MCDB 4FS. Seminar, 1 hour.

Selected topics of special interest designed to display the broad diversity of the biological sciences. This course is strongly recommended for freshmen and/or prospective majors within the biological sciences. (F)

20. Concepts of Biology
(4) TANOWITZ

Not open for credit toward graduation to students who have completed Natural Science 1C. Not open for credit to students who have completed Biology 20, or Biology 4A-B-C, or MCDB 1A-AL, or EEMB 2B-2L, or MCDB 1B-BL, or EEMB 3-3L. Same course as MCDB 20. Lecture, 3 hours; discussion, 1 hour.

Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. (S)

21. General Botany
(4) SCHNEIDER

Not open for credit to students who have completed Botany 20, or Biology 4A-B-C; or MCDB 1A-AL, or EEMB 2B-2L, or MCDB 1B-BL, or EEMB 3-3L. Lecture, 3 hours; discussion/laboratory, 2 hours.

Unifying principles of biology utilizing plants as exemplary material; correlation of structure and function; genetics, selection, and evolution; energy transformation; growth of populations and the relation of plants to man; conservation. (W)

23. Human Development and Reproductive Physiology
(4) COLLINS

Not open for credit to students who have completed Biology 23, or Biology 4A-B-C; or MCDB 1A-AL, or EEMB 2B-2L, or MCDB 1B-BL, or EEMB 3-3L. Lecture, 3 hours; discussion, 1 hour.

Human development with emphasis on events occurring prior to parturition. Hormonal devices involved in human reproduction. Comments on senescence and carcinogenesis. (SS)

24. Aquatic Ecology
(4) WARNER, BRZEZINSKI

Not open for credit to students who have completed Biology 24, or Biology 4A-B-C, or MCDB 1A-AL, or EEMB 2B-2L, or MCDB 1B-BL, or EEMB 3-3L. Lecture, 3 hours; discussion, 1 hour.

Introduction to the ecology of plants and animals which live in aquatic environments stressing the interactions of the biota with their environments. Discussion of the approaches that aquatic biologists use to answer ecological questions, and examine ecological principles which have emerged from the study of aquatic communities. (Not offered 2000-01)

25. Human Anatomy
(4) TANOWITZ

Not open for credit to students who have completed Zoology 25. Same course as MCDB 25. Lecture, 3 hours; discussion, 1 hour.

Recommended preparation: EEMB 20 or MCDB 20 or other course in biology.

Emphasis on fundamental structural and functional approaches of organ systems based on the human organism. Discussion of modern biomedical advances, techniques, and current topics in relation to their respective systems. (F,W)

25L. Laboratory in Human Anatomy
(4) TANOWITZ

Prerequisite: MCDB 25 or EEMB 25 (may be taken concurrently).

Same course as MCDB 25L. Not open for credit to students who have completed Zoology 25L. Laboratory, 8 hours; discussion, 1 hour.

Emphasis on fundamental structural and functional approaches of organ systems based on the human organism. Discussion of modern biomedical advances, techniques, and current topics in relation to their respective systems. (W,S)

30. Concepts in Statistics
(4) STAFF, ENDLER

Prerequisites: Mathematics 3A-B or 34A-B.

Not open for credit to students who have completed Biology 30. Lecture, 3 hours; laboratory, 3 hours.

Non-mathematical introduction to basic ideas in statistics, such as replication, controls, randomization, random sampling, the repeated sampling principle, chance models. Includes descriptive statistics, laws of large numbers, normality, confidence intervals, regression and correlation, hypothesis tests, elementary computing and simulation. (F,S)

98. Readings in Biological Sciences
(1-3) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students are limited to 6 units of Biology 98 and EEMB 98 combined. Tutorial, 1 hour.

Special readings on selected topics in biology. Individual conferences one hour every week. Designed to broaden the outlook and experience of advanced lower-division students. Hours and credit by arrangement with any member of the staff.

99. Introduction to Research
(1-3) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students are limited to 6 units of Biology 99 and EEMB 99 combined. Tutorial, 3-9 hours.

Laboratory experience for advanced lower-division students. Hours and credit by arrangement with any member of the staff.

UPPER DIVISION

103A. Flora and Vegetation of California
(4) WILKEN

Prerequisite: EEMB 3.

Not open for credit to students who have completed Botany 103A. Lecture, 2 hours; laboratory/field, 6 hours.

An introduction to plant families, species, and communities in California by means of laboratory work and field observations, and including techniques of plant collection and identification. One three-day field trip is required in addition to the regularly scheduled laboratories. (W)

106. Biology of Fishes
(4) WARNER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Zoology 161. Lecture, 3 hours; laboratory, 4 hours.

The evolution, systematics, biogeography, and ecology of fishes. (F)

107. Biology of Amphibians and Reptiles
(3) SWEET

Prerequisites: EEMB 113 and 113L.

Not open for credit to students who have completed Zoology 130 or 130A. Lecture, 2 hours; discussion, 1 hour.

An introduction to the diversity, systematics, functional morphology and ecology of modern lineages of amphibians and reptiles. (Not offered 2000-01)

107L. Herpetology Lab
(2) SWEET

Prerequisite: concurrent enrollment in EEMB 107.

Not open for credit to students who have completed Zoology 130 or 130L. Lab, 3 hours, discussion, 1 hour.

An intensive introduction to the diversity and systematics of amphibians and reptiles worldwide with an additional focus on the western North American herpetofauna. (Not offered 2000-01)

108. Vertebrate Evolutionary Morphology
(S) SWEET

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Zoology 108. Lecture, 3 hours; laboratory, 6 hours.

Lectures concern evolutionary and functional aspects of the development of structural complexity in vertebrates, emphasizing the role of size in determining mechanical and physiological optima and limits, and the constraints imposed by the evolutionary process. Labs involve dissections and demonstrations. (F; offered even-numbered years)

109. Vertebrate Paleontology
(4) WYSS

Prerequisite: Geology 2 or 3 or 7 or 30 or MCDB 1A.

Same course as Geology 148. Letter grade required for majors. Not open for credit to students who have completed Zoology 109. Lecture, 3 hours; discussion, 1 hour

Introduction to the history of vertebrate life, with emphasis on the phylogenetic relationships of the major vertebrate groups.

110. Advanced Parasitology
(3) KURIS

Prerequisite: EEMB 111.

Not open for credit to students who have completed Zoology 110. Lecture, 2 hours; laboratory 3 hours.

Consideration of theoretical aspects of parasite ecology, evolution, and physiology. General biology of a selected group of parasites chosen in consultation with students. Laboratory: group projects of experimental parasitological systems relevant to the students' general interests. Written report required. (Not offered 2000-01)

111. Parasitology
(S) KURIS

Prerequisites: EEMB 2 and MCDB 1B; and EEMB 3.

Not open for credit to students who have completed Zoology 111. Lecture, 3 hours; laboratory, 6 hours.

An ecological approach to parasitism. Survey of parasites of humans and other animals. Discussion of evolutionary, genetic, immunological, sociological, political, and economic aspects. Laboratory stresses anatomy and life cycles of living material. (W)

112. Invertebrate Zoology
(S) KURIS

Prerequisites: EEMB 2 and MCDB 1B; and EEMB 3.

Not open for credit to students who have completed Zoology 112A. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the classification, structure, life histories, and habits of the major phyla of invertebrate animals (excluding annelids and arthropods), with emphasis on the marine fauna of the Santa Barbara area. (F)

113. Evolution and Ecology of Terrestrial Vertebrates
(2) ROTHSTEIN

Prerequisites: MCDB 1A; and MCDB 1B and EEMB 2; and EEMB 3; and concurrent enrollment in EEMB 113L.

Not open for credit to students who have completed Zoology 113A. Lecture, 2 hours.

Evolutionary and ecological principles as demonstrated by amphibians, reptiles, birds, and mammals; competition and other species interactions; diversity and systematics with special emphasis on speciation theory. (F)

113L. Laboratory and Fieldwork in Vertebrate Biology
(2) ROTHSTEIN

Prerequisite: concurrent enrollment in EEMB 113.

Not open for credit to students who have completed Zoology 113AL. Laboratory, 3 hours; field, 3 hours.

Weekly field trips to numerous locations and laboratory work emphasizing classification, identification, and observation of local terrestrial vertebrates. Introduction to techniques such as trapping and banding to study vertebrates in the field. (F)

114. The Biology and Evolution of Plants
(S) SCHNEIDER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Botany 114. Lecture, 3 hours; laboratory, 6 hours.

The structure, life-cycles and evolution of fossil and living vascular plants. Emphasis on such topics as the origin of land plants, early land plants, evolution of the ovule, siphonogamy, angiospermy, the flower and fruit. (S)

115. Plant Anatomy
(S) SCHNEIDER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Botany 113. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental, and comparative aspects of anatomy. (Not offered 2000-01)

116. Invertebrate Zoology: Higher Invertebrates
(S) KURIS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Zoology 112B. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the classification, structure, life histories and habits of annelids and arthropods, with emphasis on the aquatic fauna of the Santa Barbara area. (S)

120. Introduction to Ecology
(4) HOLBROOK

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Letter grade required for majors. Not open for credit to students who have completed Biology 120. Lecture, 3 hours; discussion, 1 hour.

Major concepts in population and evolutionary ecology. Theoretical, experimental, and field studies pertaining to population growth and regulation, competition, predation, diversity, adaptation, and life history strategies. (F)

120AL-BL. Field and Laboratory Studies in Ecology
(3-3) HOLBROOK

Prerequisite: EEMB 120 (may be taken concurrently).

A two-quarter in-progress course with grades for both quarters issued upon completion of EEMB 120BL. Not open for credit to students who have completed Biology 120AL-BL.

Practical studies in ecology in both field and laboratory. Individual projects will be emphasized. (F,W)

121. Field Ecology
(4) HOLBROOK

Prerequisite: Concurrent enrollment in EEMB 122 and 123; consent of instructor.

Designed to instruct and demonstrate to students the value and approaches of experimental field research using the hypothetico-deductive experimental approach. May be taken only as part of the White Mountain Research Supercourse. (S)

122. Applied Conservation Biology
(4) HOLBROOK

Prerequisite: Concurrent enrollment in EEMB 121 and 123; consent of instructor.

Designed to introduce students to the complexities and realities of natural resource exploitation and preservation, emphasizing the trade-offs between economic benefits and ecosystem stability and sustainability. May be taken only as part of the White Mountain Research Supercourse. (S)

123. Physiological Ecology
(4) HOLBROOK

Prerequisite: Concurrent enrollment in EEMB 121 and 122; consent of instructor.

An examination of the functional means by which animals and plants cope with their environments, the physiological limits that determine the boundary conditions of various ecological niches. Unifying principles that describe the regulatory features of all animals or plants emphasized. May be taken only as part of the White Mountain Research Supercourse. (S)

124. Biochemical Ecology
(4) CHAPMAN

Prerequisite: MCDB 1A; and, EEMB 2 and MCDB 1B; and, EEMB 3.

Introduction to natural products . Discussion of the roles and functions of natural products in animal-plant, plant-plant, and plant-microbe interactions.

125. Dynamics of Ecological Systems
(4) MURDOCH

Prerequisite: EEMB 120.

Not open for credit to students who have completed Biology 125. Lecture, 3 hours; discussion, 1 hour.

Covers recent advances in analyzing the dynamics of ecological populations and communities based on the properties of individual organisms. Relates evolution, physiology, and behavior to dynamics. (Not offered 2000-01)

126MM. Molecular Modeling in Pharmacology
(3) JACOBS, AUE

Prerequisite: MCDB 126A. Lecture, 2 hours; laboratory, 4 hours.

Computer-assisted molecular modeling and computational chemistry for a better understanding of drug-receptor interactions and drug-design. (S)

127. Introduction to Botany
(4) MAZER

Prerequisite: EEMB 3.

Not open for credit to students who have completed Biology 127. Lecture, 3 hours; discussion, 1 hour.

Introduction to plant biology; the importance of plants to humans; taxonomic and ecological diversity; and evolutionary processes. Will serve as a foundation for all upper-division plant biology courses. Emphasis on life history variation; pollination; reproduction and mating strategies. (Not offered 2000-01)

127L. Laboratory for Introduction to Botany
(2) MAZER

Prerequisites: EEMB 3; EEMB 127 (may be taken concurrently).

Not open for credit to students who have completed Biology 127L. Laboratory, 6 hours.

Computer, lab, greenhouse, and field experience in studies of plant anatomy, physiology, reproduction, pollination, morphology, and adaptation to different environments. Live material and herbarium collections used to demonstrate plant diversity, speciation, and genetic variation. Independent and team projects. (Not offered 2000-01)

129. Introductory Genetics
(4) HODGES, BUSH

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3 with a grade of C or better.

Not open for credit to students who have completed Biology 130A-B or MCDB 101A-B. Lecture, 3 hours; discussion, 1 hour.

Introduction to genetics. Mendel's laws, structure, replication and expression of DNA, linkage and chromosomal aberrations, mutation and recombination, concepts of genetic variability, quantitative and population genetics. (W)

130. Population Genetics
(4) ENDLER

Prerequisite: MCDB 1A with a grade of C or better.

Not open for credit to students who have completed Biology 130C.

Recommended preparation: EEMB 129. Lecture, 3 hours; discussion, 1 hour.

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics. (S)

131. Principles of Evolution
(4) SWEET, VALENTINE

Prerequisites: MCDB 1A; and, EEMB 2 and MCDB 1B, or Geology 2 and 3.

Same course as Geology 121. Not open for credit to students who have completed Biology 131. Lecture, 3 hours; discussion, 1 hour.

A foundation course concerning the mechanisms of evolution at micro- and macroevolutionary levels, and interpretation of the resulting patterns of adaptation and organic diversity. (W)

132. Molecular Markers and Evolution
(4) HODGES

Prerequisites: EEMB 131; and EEMB 129 or MCDB 101A-B.

Recommended preparation: EEMB 130. Lecture, 3 hours; discussion, 1 hour.

This course traces the development of molecular markers and their influence on studies of evolutionary processes including identification of mating patterns, reconstruction of phylogenies and analyses of hybrid zones. Discussion of techniques for obtaining markers. (S)

132L. Molecular Markers and Evolution—Laboratory
(2) HODGES

Prerequisite: Concurrent enrollment in EEMB 132. Laboratory, 3 hours; discussion, 1 hour.

Generation and application of molecular genetic markers to questions in ecology and evolution. Techniques covered include the isolation of DNA, the development of a variety of markers, and methods of analysis. (S)

133. Biodiversity and Conservation Biology
(4) ANDELMAN

Prerequisite: EEMB 3.

Same course as Environmental Studies 133. Not open for credit to students who have completed Biology 133. Lecture, 3 hours; discussion, 1 hour.

Field methods, literature, computer use, and underlying theory important to biodiversity research. Use of preserved and living collections by ecologists, conservation biologists, and evolutionists to detect evolutionary processes and threats to biological communities; to measure ecological processes and biodiversity. Field trips. (W)

134. Phycology
(5) CHAPMAN

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 134. Lecture, 3 hours; laboratory, 6 hours.

Overview on the biology of macroalgae and phytoplankton, with emphasis on living and adapting in the various environments. Topics include form-function, ecophysiology, unique aspects of biochemistry, antiherbivore strategies, applied phycology and mariculture. (S)

135. Evolutionary Ecology
(4) MAZER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 135, Zoology 139 or Botany 150. Lecture, 3 hours; discussion 1 hour.

Introduction to variation and evolution in higher organisms with an emphasis on the detection of natural selection and other evolutionary processes in wild species. Life-history patterns (fecundity, mortality, sexual expression), behavior, coevolution, and other aspects of species interactions. (Not offered 2000-01)

135L. Evolutionary Ecology of Plants Field Laboratory
(2) MAZER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; and EEMB 135 (may be taken concurrently).

Not open for credit to students who have completed Biology 135L or Botany 150L. Discussion, 1 hour; laboratory, 3 hours.

Introduction to the analysis of experiments designed to detect evolutionary processes under field conditions. Experimental design, data analysis, and computer aided instruction in graphical presentation of data and statistical programs. (not offered 2000-2001)

136. Principles of Paleontology
(3) TIFFNEY

Same course as Geology 111. Letter grade required for majors. Not open for credit to students who have completed Biology 111.

Recommended preparation: a beginning biology course. Lecture, 3 hours.

The ecological structure and evolution of the biosphere as illustrated by the fossil record.

136L. Principles of Paleontology Laboratory
(2) TIFFNEY

Prerequisite: EEMB 136 (may be taken concurrently).

Same course as Geology 111L. Letter grade required for majors. Not open for credit to students who have completed Biology 111L. Laboratory, 6 hours.

Laboratory and field exercises and projects in the identification and interpretation of fossil taxa and fossil communities.

137. Plant Paleobiology
(3) TIFFNEY

Prerequisite: EEMB 136 or Geological Sciences 111 or upper-division standing in biological sciences.

Same course as Geology 141. Letter grade required for majors. Not open for credit to students who have completed Botany 110.

Examination of the history of land plants; the systematics, morphology, and phylogeny of major groups. Major evolution and biogeographic patterns.

137L. Plant Paleobiology Laboratory
(1) TIFFNEY

Prerequisite: EEMB 137 (may be taken concurrently).

Same course as Geology 141L. Letter grade required for majors. Not open for credit to students who have completed Botany 110L. Laboratory, 3 hours.

Anatomy, morphology, and systematics of fossil plants from the specimens.

138. Ethology and Behavioral Ecology
(5) ROTHSTEIN, WARNER

Prerequisite: EEMB 2 and MCDB 1B.

Not open for credit to students who have completed Zoology 138. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours.

Animal behavior and social organization viewed from evolutionary and whole animal perspectives. Specific topics stress environmental influences and natural selection and include: classical ethology, development and learning, communication, foraging, aggression, territoriality, mating systems, parental care, altruism, and sociobiology. (W; offered odd-numbered years)

139. Sensory Ecology and Evolution
(4) ENDLER

Prerequisite: MCDB 1A; EEMB 2 and MCDB 1B, and EEMB 3; and Mathematics 3A-B or 34A-B.

Recommended preparation: Physics 6A-B-C. Lecture, 3 hours; laboratory, 2 hours.

Sensory mechanisms, their ecological/evolutionary

consequences, vision and other senses in natural environments, composition of visual backgrounds, perception of pattern, animal communication, predator-prey relationships, detection of prey/territorial neighbors/mates, polymorphism, detecting, measuring, and predicting natural selection, response to changing environments.

140. General Plant Ecology
(4) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Botany 140. Lecture, 3 hours; discussion, 1 hour.

An introduction to the principles of plant ecology. (F)

140L. General Plant Ecology Lab
(2) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Botany 140L. Laboratory and field, 6 hours.

Field and laboratory research techniques. (F)

141. Physiological Plant Ecology
(6) MAHALL

Prerequisites: MCDB 1A; and, EEMB 2 and MCDB 1B; and, EEMB 3.

Not open for credit to students who have completed Botany 141. Lecture, 4 hours; laboratory, 3 hours.

A study of the environmental and physiological parameters of plant distributions and niches. (Not offered 2000-01)

143. Ecological Physiology
(3) CHILDRESS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Zoology 143. Lecture, 3 hours.

Consideration of the physiological responses and adaptations of animals to their environments. Emphasis on the underlying physiological and biochemical mechanisms. A comparative approach in nature emphasizing aquatic animals. (F)

143L. Laboratory in Ecological Physiology
(2) CHILDRESS

Prerequisite: concurrent enrollment in EEMB 143.

Not open for credit to students who have completed Zoology 143L. Laboratory, 6 hours.

Semi-independent study lab to accompany EEMB 143. Study of the physiological responses and adaptations of animals to their environment. Aquatic animals emphasized. (F)

144. Marine Microbiology
(4) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 142.

Recommended preparation: EEMB 145A-B or MCDB 131. Lecture, 3 hours; discussion, 1 hour.

Exploration of evolution, ecology, biochemistry, and genetics of marine bacteria. Topics include: historical perspective, molecular approaches in microbial ecology, trophic interactions/biogeochemistry, physiological adaptations, and biochemistry and genetics of selected systems (bioluminescence, deep-sea adaptations, cell-surface interactions, starvation survival). (not offered 2000-2001)

144L. Marine Microbiology Lab
(2) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; concurrent enrollment in EEMB 144 or 145A.

Not open for credit to students who have completed Biology 142L. Laboratory, 6 hours.

A laboratory survey of the diversity, physiology and ecology of marine prokaryotes, and methods used to identify, quantify and measure their activities. (not offered 2000-2001)

145A. Environmental Processes in Oceans and Lakes
(4) MELACK, MACINTYRE

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 145A. Lecture, 3 hours; discussion, 1 hour.

A discussion of biological, chemical, physical, and optical processes in marine and freshwater environments and the linkage between these processes. Emphasis on primary production, global biogeochemical cycles, nutrient dynamics, and synoptic mapping of biological and physical patterns. (F)

145AL. Chemical and Physical Methods of Aquatic Environments
(3) MACINTYRE

Prerequisite: EEMB 145A (may be taken concurrently).

Not open for credit to students who have completed Biology 145AL. Laboratory, 8 hours; discussion, 1 hour.

A survey of physical and chemical methods used by limnologists and oceanographers supplemented with field observations. (F)

145B. Environmental Processes in Oceans and Lakes
(4) ALLDREDGE

Prerequisite: EEMB 145A.

Not open for credit to students who have completed Biology 145B. Lecture, 3 hours; discussion, 1 hour.

A continuation of EEMB 145A with emphasis on secondary productivity, ecology of higher trophic levels including zooplankton and fish, food web dynamics, benthic-pelagic coupling, ocean circulation, and biogeographical aspects of pelagic communities. (W)

145BL. Methods of Aquatic Biology
(3) ALLDREDGE

Prerequisite: EEMB 145B (may be taken concurrently).

Not open for credit to students who have completed Biology 145BL Laboratory, 6 hours; field, 3 hours.

Laboratory and field techniques used to measure various biological processes including productivity, and to sample, identify, enumerate, and culture marine organisms. (W)

145C. Aquatic Communities
(3) SCHMITT

Prerequisites: EEMB 145A-B.

Not open for credit to students who have completed Biology 145C.

Recommended preparation: EEMB 120. Lecture, 3 hours.

A survey of the patterns of distribution, diversity, and abundance of species in marine and freshwater communities, with an emphasis on the dynamic interactions which shape these patterns. Applied aspects: fisheries, mariculture. (S)

145CL. Methods of Aquatic Community Ecology
(3) SCHMITT

Prerequisite: concurrent enrollment in EEMB 145C.

Not open for credit to students who have completed Biology 145CL. Laboratory, 6 hours; discussion, 1 hour.

Experience in the field techniques of aquatic community ecology. (S)

146. Biometry
(4) STEWART-OATEN

Prerequisites: Mathematics 3A-B or 34A-B; and, EEMB 30 or PSTAT 5.

Not open for credit to students who have completed Biology 146A or EEMB 146A. Lecture, 3 hours; laboratory, 3 hours.

Linear models and least squares fitting: simple and multiple linear regression; analysis of variance (fixed, random, and mixed models; crossed and nested effects; balanced and unbalanced designs); analysis of covariance, factorial designs; incomplete layouts; use of transformations. (Not offered 2000-01)

147. Biology of Coral Reefs
(4) STAFF

Prerequisites: EEMB 112 and 145A-B.

Not open for credit to students who have completed Biology 147. Lecture, 3 hours; laboratory, 3 hours.

An intensive discussion of coral reefs, including their paleontology, geomorphology and geochemistry, population biology, and physiology. (S)

148. Ecology of Running Waters
(4) STAFF

Prerequisite: EEMB 145B.

Not open for credit to students who have completed Biology 148. Lecture, 3 hours; discussion, 1 hour.

Review of literature on the physics, chemistry, and biology of running water ecosystems. (W)

148L. Investigations in Stream Ecology
(3) STAFF

Prerequisite: EEMB 145AL.

Not open for credit to students who have completed Biology 148L. Laboratory, 6 hours; discussion, 1 hour.

Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (W)

149. Mariculture for the 21st Century: Research Frontiers
(4) MORSE, CHAPMAN, COLLINS

Prerequisite: upper-division standing.

Same course as MCDB 149. Not open for credit to students who have completed Biology 149. Lecture, 3 hours; discussion 1 hour.

Recent progress and new directions in research increasing production of valuable marine animals, plants and microorganisms. Control of reproduction, development, growth and disease in marine species; problems encountered in commercializing production; regional and biological solutions; the role of modern biotechnology. (S)

151. Photosynthesis and Primary Productivity
(3) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3 and 145A-B.

Not open for credit to students who have completed Biology 151. Lecture, 3 hours.

Introduction to the process of photosynthesis and discussion of the ecological/physiological aspects of determining primary production in aquatic systems. (S)

152. Applied Marine Ecology
(5) SCHMITT, STAFF

Prerequisites: Environmental Studies 100, or EEMB 2 and MCDB 1B, or EEMB 3; and Mathematics 34A.

Same course as Environmental Studies 152. Not open for credit to students who have completed Biology 152.

Recommended preparation: EEMB 120. Lecture, 3 hours; discussion, 2 hours.

Introduction to the application of ecological principles and methods to environmental problems in marine habitats. Focus on problems that are local, regional, and global in scale. Concepts illustrated with case studies. (W)

154. Integrative Physiology
(4) SUAREZ

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; and, Chemistry 107A-B or 130A-B.

Not open for credit to students who have completed Zoology 153A. Lecture, 3 hours; discussion, 1 hour.

A rigorous introduction to how animals function, integrating information and concepts appropriate to the understanding of physiological processes from the level of molecules to whole organisms. (F)

155. Biochemical Adaptation to the Environment
(5) SUAREZ

Prerequisite: EEMB 154 or MCDB 108A or 108B.

Not open for credit to students who have completed Zoology 153B. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours.

Biochemical mechanisms of physiological and evolutionary adaptation to temperature, pressure, diet and food, availability, locomotory activity, and oxygen availability. (W)

156. Biology of Reproduction
(4) COLLINS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Zoology 156. Lecture, 3 hours; discussion, 1 hour.

Examination of hormonal mechanisms regulating initiation/maintenance of reproductive function in vertebrates. Review of regulation of fertilization/pregnancy/parturition. Endocrine aspects do not duplicate topics covered in EEMB 155, and provide background in physiology for MCDB 126B. (S)

157. Cell Physiology
(4) TRENCH

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3. Lecture, 3 hours; discussion, 1 hour.

An analysis of processes fundamental to the functioning of cells, using actual examples from the Protista. These processes include, but are not limited to, membrane structure and function, motility, metabolite transport, protein trafficking, energy acquisition and utilization. (not offered 2000-2001)

158. Island Biology
(3) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 158. Lecture, 3 hours.

Dispersal to islands and evolutionary tendencies on islands (e.g. adaptive radiation, flightlessness, etc.); biogeography, geology, quantitative and experimental studies, conservation, and extinction on islands. (W)

159. Tropical Ecology
(4) STAFF

Prerequisite: EEMB 120 or 145C.

Not open for credit to students who have completed Biology 159. Lecture, 3 hours; discussion, 1 hour.

Examination of ecological processes in terrestrial and aquatic tropical environments. (W)

160. Neural Basis of Behavior
(4) CASE

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3. Lecture, 3 hours; discussion, 1 hour.

Sensory, motor, and central nervous systems of important models from among marine invertebrates, insects and vertebrates with emphasis on orientation, locomotion, food search, predator-prey and intraspecific interactions. (S)

161. Size in Biology
(3) SWEET

Prerequisite: EEMB 108.

Not open for credit to students who have completed Biology 161. Lecture, 2 hours; discussion, 1 hour.

An examination of the role played by body size in morphology, physiology, and ecology stressing the influence of the surface/volume disparity and variation in size on principles of structural and functional design. (Not offered 2000-01)

163. Deep-Sea Biology
(3) CHILDRESS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Not open for credit to students who have completed Biology 153 or EEMB 153. Lecture, 3 hours.

Consideration of the biology of midwater and benthic organisms living beneath the euphotic zone. Emphasis on dynamic aspects of biological processes in this unique environment. Surveys of major deep-sea taxa and the history of deep-sea biology are included. (S)

164. Natural Product Probes in Biology
(4) JACOBS

Prerequisites: EEMB 129 or MCDB 101A (may be taken concurrently); and, Chemistry 130A-B-C or 107A-B; and Chemistry 6A-B.

Not open for credit to students who have completed EEMB 126A or MCDB 126A. Lecture, 3 hours; discussion, 1 hour.

A comprehensive examination of unique natural product probes and toxins that define physiological pathways and serve as a basis for modern pharmacology. (F)

164L. Natural Product Probes Laboratory
(3) JACOBS, COLLINS

Prerequisites: concurrent enrollment in EEMB 164.

Not open for credit to students who have completed EEMB 126AL or MCDB 126AL. Laboratory, 8 hours; discussion, 1 hour.

Characterizing physiological pathways in isolated tissues, organs, and intact animal preparations using natural probes. (W)

164S. Introduction to Molecular Modeling for Pharmacology
(1) JACOBS

Prerequisite: concurrent enrollment in EEMB 164.

Not open for credit to students who have completed EEMB 126AS or MCDB 126AS. Laboratory, 3 hours.

Concepts in molecular modeling and drug-receptor interactions using 3-D computer graphics. (F)

170. Biology of the Marine-Land Interface
(4) PAGE

Prerequisites: MCDB 1A; and, EEMB 2 and MCDB 1B; and EEMB 3.

Letter grade required for majors. Not open for credit to students who have completed Biology 141.

Influence of physical factors on adaptations of shoreline organisms with emphasis on the arthropods. (SS)

171. Ecosystem Processes
(4) SCHIMEL

Prerequisites: Environmental Studies 100 or EEMB 2 or MCDB 1B.

Same course as Environmental Studies 171. Not open for credit to students who have completed Biology 171.

Recommended preparation: EEMB 120. Lecture, 3 hours; discussion, 1 hour.

An examination of carbon and nutrient cycling in terrestrial ecosystems. Specific foci will include: a) plant-soil linkages including decomposition and nutrient supply, and b) the role of above- and below-ground community composition on element cycles. (W)

178. Statistical Methods in Field Ecology
(4) STEWART-OATEN

Prerequisite: EEMB 146 or PSTAT 133A. Lecture, 3 hours; laboratory, 2 hours.

Sampling to estimate abundance, including transect, mark-recapture, probability and adaptive sampling; multivariate methods for exploration and display; introduction to time series and spatial statistics. (Not offered 2000-01)

179. Modeling Environmental and Ecological Change
(4) NISBET

Prerequisites: Mathematics 3A-B or 34A-B.

Not open for credit to students who have completed Biology 179. Lecture, 3 hours; laboratory, 3 hours.

An introduction to mathematical and computer models in studies of the natural environment with emphasis on population dynamics. Case studies of interacting physical, chemical and biological phenomena. (F)

179H. Ecological Modeling–Honors
(1) NISBET

Prerequisite: concurrent enrollment in EEMB 179 and consent of instructor. Discussion, 1 hour.

Honors component of EEMB 179 designed to permit an in-depth study involving formulation, analysis and interpretation of an ecological model. A written report on the work is required. (F)

183. Introduction to Teaching in Biology
(1-5) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 5 units in combination with MCDB 183 but no units may be applied toward the major.

Students will assist instructor in teaching course in which the student previously received a grade of A or better. Activities will be determined in consultation with the instructor and may include leading discussion, laboratory, or tutorial section(s), attending lectures and grading exams.

184. Internship in Biological Sciences
(1-5) STAFF

Prerequisites: upper-division standing and consent of department.

Students must have a 2.5 cumulative grade-point-average. Course may be repeated for credit to a maximum of 15 units. Maximum units for credit defined on major sheets.

Opportunity to obtain practical biological related research experience by working under faculty direction as an intern with local, state, federal, or private agencies. A written report will be submitted for evaluation.

185. Field Work in Oceanography
(1-8) PREZELIN

Prerequisites: EEMB 145A or 145B; and consent of instructor.

May be repeated for credit to a maximum of 8 units but only 4 units may be applied toward the major.

Participation as a member of a scientific party on Scripps Institution (UCSD), NMFS, and UCSB oceanographic cruises. Cruise duration is variable (7 to 60 days), and course units will vary with cruise duration. Supervision by scientific party leader. Report required. (F,W,S,SS)

186. Restoration Ecology
(2-4) STAFF

Prerequisites: upper-division standing; consent of instructor.

Units require greenhouse, nursery, and field work at various times and places; weekly seminar participation, and a paper. Seminar, 1 hour; field, 5-15 hours.

Planning, design, implementation, and monitoring of ecological projects (habitat restoration and creation, enhancement of ecosystem functions, recovery of endangered species) at campus-associated habitats and biotic communities including estuarine wetlands, vernal pools, freshwater marshes, coastal scrub, grasslands, oak woodlands.

187. Pharmacology Colloquia
(1) JACOBS, WILSON

Prerequisites: MCDB 1A; and, EEMB 2 and MCDB 1B; and EEMB 3.

Same course as MCDB 187. May be repeated for credit to a maximum of 4 units but only 2 units may be applied toward the major. Seminar, 1 hour.

Lectures on active research programs in pharmacology in the federal, state, and private research sectors. (W,S)

192. Special Topics in Biological Sciences
(1-4) STAFF

Prerequisites: upper-division standing in biology and consent of instructor.

May be repeated for credit in combination with Biology 192 and MCDB 192. Maximum units for credit in major: 8 for BS; 4 for BA. Lecture, 1 to 4 hours.

Special topics of current importance in biological sciences. Course content will vary. Information may be obtained in department office.

194AA-ZZ. Group Studies for Advanced Students
(2) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit in combination with Biology 194AA-ZZ and MCDB 194AA-ZZ to a maximum of 8 units. Individual letter designations may be repeated for credit to a maximum of 4 units.

Maximum units for credit defined on major sheets. Seminar, 2 hours.

Oral reports by students.

AA. Evolutionary Ecology: Warner
AL. Energetics of Animal Locomotion: Suarez
B. Manipulating Reproduction: Collins
BN. Behavioral Neurobiology: Case
C. Systematics: Sweet
CE. Community Ecology: Gaines, Cooper
D. Plant Ecology: Mahall; Schimel
DD. Endocrinology: Collins
DL. Contemporary Approaches to Marine Biology.
EE. Symbiosis: Trench
EN. Environmental Endocrinology: Collins
ET. Ecological Toxicology: Holbrook; Nisbet; Schmitt
EV. Evolutionary Biology: Mazer; Endler; Rothstein; Warner; Hodges; Sweet
FF. Photosynthesis: Prezelin
GG. Evolutionary Morphology: Sweet
J. Evolutionary and Behavioral Ecology of Vertebrates: Rothstein
M. Reproductive Ecology and Evolution: Mazer; Hodges
MR. Metabolic Regulation: Suarez
O. Ecological Genetics: Endler
Q. Aquatic Biology: Cooper; Melack
S. Plant Systematics and Evolution: Schneider; Wilken
T. Parasitology: Kuris
TE. Theoretical Ecology and Evolution: Nisbet
Z. Ecological Physiology: Childress

197. Directed Studies
(1-5) STAFF

Prerequisites: a major within EEMB; consent of department; upper-division standing; completion of two upper-division courses in MCDB or EEMB.

Students must have a minimum grade-point average of 2.5 in upper-division major courses and are limited to a maximum of 12 units in EEMB 197 and MCDB 197 combined. Maximum units for credit defined on major sheets. See also credit limits with other courses in description of major requirements.

Hours and credit by arrangement with any faculty member. (F,W,S)

198. Directed Readings
(1-5) STAFF

Prerequisites: a major within EEMB; consent of department; upper-division standing; completion of two upper-division courses in MCDB or EEMB.

Students must have a minimum grade-point average of 3.0 in upper-division major courses and are limited to 5 units per quarter and 30 units total in all 9B/99/19B/199/199RA courses combined. Maximum units for credit in major: B for BS; 4 for BA. See also credit limits with other course in description of major requirements. Tutorial, 1-5 hours.

Individual conferences one hour every two weeks. Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field. (F,W,S)

199. Independent Studies
(1-5) STAFF

Prerequisites: a major within EEMB; consent of department; upper-division standing; completion of two upper-division courses in MCDB or EEMB.

Students must have a minimum grade-point average of 3.0 in upper-division major courses and are limited to 5 units per quarter and 30 units total in all 9B/99/19B/199/199RA courses combined. Maximum units for credit in major: B for BS; 4 for BA. See also credit limits with other course in description of major requirements. Tutorial, 1-3 hours; field, 1-5 hours.

Hours and credit by arrangement with any faculty member. Laboratory or field. (F,W,S)

GRADUATE COURSES

211. Parasitology
(5) KURIS

Prerequisites: EEMB 2B-2L or MCDB 1B-BL; and EEMB 3-3L or equivalents.

Not open for credit to students who have completed Zoology 211. Lecture, 3 hours; laboratory, 6 hours.

An ecological approach to parasitism. Survey of parasites of humans and other animals. Discussion of evolutionary, genetic, immunological, sociological, political, and economic aspects. Laboratory stresses anatomy and life cycles of living material. (W)

212. Topics in Parasitology
(3) KURIS

Prerequisite: consent of instructor.

Not open for credit to students who have completed Zoology 212. Lecture, 2 hours; laboratory, 3 hours.

Consideration of theoretical aspects of parasite ecology, evolution, and physiology. General biology of a selected group of parasites chosen in consultation with students. Laboratory: individualized study of parasitological aspects relevant to students' general interests. An oral and written report are required. (Not offered 2000-01)

222. Experimental Design Workshop
(2) GAINES, RICE

Prerequisite: introductory course in statistics. Seminar, 2 hours.

A workshop for graduate students focusing on statistical issues in the design and analysis of ecological experiments. Includes extensive analyses of real data sets supplied by the students. Specific topics vary each year. (S)

225. Dynamics of Ecological Systems
(4) MURDOCH

Prerequisite: EEMB 120.

Not open for credit to students who have completed Biology 225. Lecture, 3 hours; discussion, 1 hour.

Covers recent advances in analyzing the dynamics of ecological populations and communities based on the properties of individual organisms. Relates evolution, physiology, and behavior to dynamics. (Not offered 2000-01)

226MM. Molecular Modeling in Pharmacology
(3) JACOBS, AUE

Prerequisite: EEMB 126A or 226A, or organic chemistry. Lecture, 2 hours, laboratory 4 hours.

Computer-assisted molecular modeling and computational chemistry as a tool for understanding concepts in pharmacology including drug-receptor interactions and drug design. (S)

230. Population Genetics
(4) ENDLER

Prerequisites: MCDB 101A-B.

Not open for credit to students who have completed Biology 230C. Lecture, 3 hours; discussion, 1 hour.

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics. (S)

232. Molecular Markers and Evolution
(4) HODGES

Prerequisites: EEMB 131; and, EEMB 129 or MCDB 101A-B.

Recommended preparation: EEMB 130.

This course traces the development of molecular markers and their influence on studies of evolutionary processes including identification of mating patterns, reconstruction of phylogenies and analyses of hybrid zones. Discussion of techniques for obtaining markers. (S)

232L. Molecular Markers and Evolution—Laboratory
(2) HODGES

Prerequisite: Concurrent enrollment in EEMB 232. Laboratory, 3 hours; discussion, 1 hour.

Generation and application of molecular genetic markers to questions in ecology and evolution. Techniques covered include the isolation of DNA, the development of a variety of markers, and methods of analysis. (S)

233. Evolutionary Ecology
(4) MAZER

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L or equivalents.

Not open for credit to students who have completed Botany 250 or Biology 233.

Introduction to variation and evolution in higher organisms with an emphasis on the detection of natural selection and other evolutionary processes in wild species. Life-history patterns (fecundity, mortality, sexual expression), behavior, coevolution, and other aspects of species interactions. (Not offered 2000-01)

233L. Evolutionary Ecology of Plants Field Lab
(2) MAZER

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L or equivalents; and EEMB 233 (may be taken concurrently).

Not open for credit to students who have completed Botany 250L or Biology 233L.

Introduction to the analysis of experiments designed to detect evolutionary processes under field conditions. Experimental design, data analysis, and computer aided instruction in graphical presentation of data and statistical programs will be covered. (not offered 2000-2001)

234. Phycology
(5) CHAPMAN

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L, or equivalents.

Not open for credit to students who have completed Biology 234.

Overview on the biology of macroalgae and phytoplankton, with emphasis on living and adapting in the various environments. Topics include form-function, ecophysiology, unique aspects of biochemistry, antiherbivore strategies, applied phycology and mariculture. (S)

235. Current Topics in Phycology
(3) CHAPMAN

Prerequisite: graduate standing. Seminar, 3 hours.

Discussion of current research on algae and their economic uses.

241. Advanced Physiological Plant Ecology
(7) MAHALL

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L; and EEMB 140 or one course in plant physiology.

Not open for credit to students who have completed Botany 241. Lecture, 4 hours; laboratory, 6 hours.

A study of the environmental and physiological parameters of plant distributions and niches with special reference to methods. (Not offered 2000-01)

243. Biological Oceanography
(3) ALLDREDGE, BRZEZINSKI

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 243. Lecture, 3 hours.

Current concepts in biological oceanography focusing on the coupling of biotic processes to ocean physics, chemistry and sedimentation. Emphasis on areas of active research with critical evaluation of current and seminal literature. (F)

244. Marine Microbiology
(4) STAFF

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and, EEMB 3-3L; and, MCDB 110, 131, EEMB 145A-B-C; and, Chemistry 1A-B-C; or equivlent.

Not open for credit to students who have completed Biology 252. Lecture, 3 hours; discussion, 1 hour.

Exploration of evolution, ecology, biochemistry, and genetics of marine bacteria. Topics include: historical perspective, molecular approaches in microbial ecology, trophic interactions/biogeochemis-

try, physiological adaptations, and biochemistry and genetics of selected systems (bioluminescence, deep-sea adaptation, cell-surface interactions, starvation survival). (not offered 2000-2001)

244L. Marine Microbiology Laboratory
(2) STAFF

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L; and, EEMB 144 (may be taken concurrently) or EEMB 145A; consent of instructor.

Not open for credit to students who have completed Biology 252L. Laboratory, 6 hours.

A laboratory survey of the diversity, physiology and ecology of marine prokaryotes, and methods used to identify, quantify and measure their activities. (not offered 2000-2001)

245. Advanced Population Biology
(4) NISBET

Prerequisites: one course in ecology and consent of instructor.

Not open for credit to students who have completed Biology 245. Lecture, 3 hours; discussion, 1 hour.

A in-depth look at selected aspects of population and community dynamics of organisms. Extensive reading of original papers. (Not offered 2000-01)

246. Biometry
(4) STEWART-OATEN

Prerequisites: Mathematics 3A-B or 34A-B or equivalent; and EEMB 30 or equivalent.

Not open for credit to students who have completed Biology 246A. Lecture, 3 hours; laboratory, 3 hours.

Linear models and least squares fitting: simple and multiple linear regression; analysis of variance (fixed, random and mixed models; crossed and nested effects; balanced and unbalanced designs); analysis of covariance, factorial designs; incomplete layouts; use of transformations. (F)

248. Ecology of Running Waters
(4) STAFF

Prerequisite: EEMB 145B.

Not open for credit to students who have completed Biology 248. Lecture, 3 hours; discussion 1 hour.

Review of literature on the physics, chemistry, and biology of running water ecosystems. (W)

248L. Investigations in Stream Ecology
(3) STAFF

Prerequisites: EEMB 145AL.

Not open for credit to students who have completed Biology 248L. Laboratory, 3 hours; lecture, 1 hour.

Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (W)

249. Mariculture: Research Frontiers in Farming the Sea
(4) MORSE, COLLINS, CHAPMAN

Prerequisite: graduate standing.

Same course as MCDB 249. Not open for credit to students who have completed Biology 249. Lecture, 3 hours; discussion, 1 hour.

Recent progress and new directions in research increasing production of valuable marine animals, plants and microorganisms. Control of reproduction, development, growth and disease in marine species; problems encountered in commercializing production; regional and biological solutions; the role of modern biotechnology. (S)

250. Photosynthesis and Primary Production
(3) STAFF

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and, EEMB 3-3L; and Chemistry 1A-B-C.

Not open for credit to students who have completed Biology 250. Lecture, 3 hours.

Introduction to the process of photosynthesis and discussion of the ecological/physiological aspects of determining primary production in aquatic systems. (S)

256. Molecular Photosynthesis and Light in Aquatic Ecosystems
(3) PREZELIN

Prerequisite: upper-division courses in aquatic biology and/or optics.

Same course as Geography 256. Not open for credit to students who have completed Biology 256. Lecture, 3 hours.

Introduction to the molecular processes of photosynthesis and the bio-optics of underwater light fields. (not offered 2000-2001)

258. Biology and Geology of Coral Reefs
(4) STAFF

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and, EEMB 3-3L or equivalents; and EEMB 112.

Not open for credit to students who have completed Biology 258. Lecture, 3 hours; laboratory, 3 hours.

An in-depth discussion of coral reefs, including their paleontology, geomorphology and geochemistry, population biology, and physiology. (Not offered 2000-01)

259. Tropical Ecology
(4) STAFF

Prerequisite: one course in introductory ecology.

Not open for credit to students who have completed Biology 259. Lecture, 3 hours; discussion 1 hour.

Examination of ecological processes in terrestrial and aquatic tropical environments. (W)

264. Natural Product Probes in Biology
(4) JACOBS

Prerequisite: consent of instructor. Lecture, 3 hours; discussion, 1 hour.

History and scope of the use of natural product probes in biology and their relationship to physiology, chemistry, and biochemistry. (F)

264L. Natural Product Probes Laboratory
(4) JACOBS

Prerequisites: consent of instructor. Laboratory, 8 hours; discussion, 1 hour.

Characterizing physiological pathways in isolated tissues, organs, and intact animal preparations using natural probes. (W)

264S. Introduction to Molecular Modeling for Pharmacology
(1) JACOBS

Prerequisite: concurrent enrollment in EEMB 264.

Not open for credit to students who have completed EEMB 226AS or MCDB 226AS. Laboratory, 3 hours.

Concepts in molecular modeling and drug-receptor interactions using 3-D computer graphics. (F)

266. Biology of Reproduction
(4) COLLINS

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2B-2L; and EEMB 3-3L.

Not open for credit to students who have completed Zoology 156 or EEMB 156.

Examination of hormonal mechanisms regulating initiation/maintenance of reproductive function in vertebrates. Review of regulation of fertilization/pregnancy/parturition. Endocrine aspects do not duplicate topics covered in EEMB 155, and provides background in physiology for MCDB 226B. (S)

269. Literature in Pharmacology
(1) JACOBS, WILSON

Prerequisite: graduate standing in biological sciences.

Same course as MCDB 269. Not open for credit to students who have completed Biology 269. Seminar, 1 hour.

Critical reading and presentation of current literature in topics on pharmacology. (F,W,S)

271. Ecosystem Processes
(4) SCHIMEL

Prerequisite: Environmental Studies 13 or MCDB 1B-BL or EEMB 2B-2L.

Not open for credit to students who have completed Biology 271.

Recommended preparation: EEMB 120. Lecture, 3 hours; discussion 1 hour.

An examination of carbon and nutrient cycling in terrestrial ecosystems. Specific foci will include plant soil linkages including decomposition and nutrient supply, and the role of above- and below-ground community composition on element cycles. (W)

272. Evolution, Adaptation and Differentiation of Pharmacophores.
(4) CHAPMAN, JACOBS

Prerequisite: graduate standing or open to pharmacology majors with consent of instructor.

Not open for credit to students who have completed Biology 272.

Analysis of phylogenetically significant pathways of natural product and hormone biosynthesis. (Not offered 2000-01)

278. Statistical Methods in Field Ecology
(4) STEWART-OATEN

Prerequisite: EEMB 146A and PSTAT 133A. Lecture, 3 hours; laboratory, 2 hours.

Sampling to estimate abundance, including transect, mark-recapture, probability and adaptive sampling; multivariate methods for exploration and display; introduction to time series and spatial statistics. (Not offered 2000-01)

279. Modeling Environmental and Ecological Change
(4) NISBET

Prerequisites: Mathematics 34A-B or 3A-B.

Not open for credit to students who have completed Biology 279.

An introduction to mathematical and computer models in studies of the natural environment with emphasis on population dynamics. Case studies of interacting physical, chemical, and biological phenomena. (F)

285. Fieldwork in Oceanography
(1-8) PREZELIN

Prerequisites: upper-division courses in aquatic biology and/or geology.

Not open for credit to students who have completed Biology 285. Field, variable hours.

Participation as a member of the scientific party on Scripps Institution (UCSD), NMFS, and UCSB oceanographic cruises. Cruise duration is variable (7 to 60 days), and course units will vary with cruise duration. Supervision by scientific party leader. Report required. (F,W,S,SS)

292. Advanced Special Topics in Biological Sciences
(1-4) STAFF

Prerequisites: graduate standing and consent of instructor.

May be repeated for credit in combination with Biology 292. Lecture, 1 to 4 hours.

Special topics of current importance in biological sciences. Course content will vary. Information on course content may be obtained in the department office.

295A. Soils and Ecosystems
(3) CHADWICK, SCHIMEL

Prerequisite: graduate standing.

Same course as Geography 295A. Seminar, 3 hours.

Development of the links between the biological and inorganic components of the soil. Water availability and nutrients control plant and soil microbial communities. These in turn affect the soil by enhancing weathering and modifying the local chemical environment. (W)

500. Teaching Assistant Orientation
(1) STAFF

Required of all teaching assistants. No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 500. Workshop, 1 hour.

General orientation regarding the University of California and the Santa Barbara campus; various pertinent regulations, officials and their functions, staff and functions; services available to teaching assistants and to students. Prospective teaching assistants are encouraged to take this course during the fall quarter prior to their employment. (F)

501. Practicum in Instruction
(1-4) STAFF
Prerequisite: concurrent teaching assistant employment.

No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 501.

Practical experience in teaching within specified areas of biology. Students will have responsibility for one or more laboratory and/or discussion sections. Staff will periodically observe teaching assistants in actual teaching situations. Evaluation forms will be completed by members of the class sections. (F,W,S)

502. Techniques of Teaching and Laboratory Class Supervision
(1-2) EARDLEY, COOPER
Prerequisite: concurrent teaching assistant employment.

Required of all teaching assistants. No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 502. Discussion, 1 hour.

Weekly discussion and readings on techniques of teaching including lecturing, leading discussions, writing and grading exams, student-teacher interactions, classroom dynamics, and teaching philosophy. (F,W)

503. Research Practicum in Biology
(1-2) STAFF
May be repeated for credit in combination with Biology 503. Tutorial, 1-2 hours.

Basic procedures and methods of research in a specified area as determined by consultation between the supervising faculty member and the research assistant. Includes weekly meetings and consultations, and formal evaluations. (F,W,S)

590. Current Research in Population Biology
(2) MAZER
Prerequisite: graduate standing.

May be repeated for credit in combination with Biology 590.

Presentation and discussion of recent work in ecology, evolution, behavioral ecology, evolutionary ecology, physiological ecology, and marine biology, by eminent and nationally and internationally well known biologists. Optional individual discussion in addition to formal lecture.

595AA-ZZ. Group Studies
(2) STAFF
Prerequisite: consent of instructor.

May be repeated for credit in combination with Biology 595AA-ZZ and MCDB 595AA-ZZ to a maximum of 8 units. Individual letter designations may be repeated for credit to a maximum of 4 units. Seminar, 2 hours.

A critical review of research in selected fields of biology. Subject matter for those seminars will be selected from the following list:

AA. Evolutionary Ecology: Warner
AL. Energetics of Animal Locomotion: Suarez
B. Manipulating Reproduction: Collins
BN. Behavioral Neurobiology: Case
C. Systematics: Sweet
CE. Community Ecology: Gaines; Schmitt; Cooper; Holbrook
D. Plant Ecology: Mahall; Schimel
DL. Contemporary Approaches to Marine Biology: Staff
EE. Symbiosis: Trench
EN. Environmental Endocrinology: Collins
ET. Ecological Toxicology: Holbrook; Nisbet; Schmitt
EV. Evolutionary Biology: Mazer; Endler; Rothstein; Warner; Sweet
FF. Photosynthesis: Prezelin
GG. Evolutionary Morphology: Sweet
J. Evolutionary and Behavioral Ecology of Vertebrates: Rothstein
K. Biometry: Stewart-Oaten
L. Philosophy of Science
M. Reproductive Ecology and Evolution: Mazer
MR. Metabolic Regulation: Suarez
MS. Marine Science: Alldredge; Prezelin; Brzezinski
O. Ecological Genetics: Endler
P. Advanced Population Ecology: Murdoch; Nisbet; Holbrook
Q. Aquatic Biology: Cooper; Melack
RR. Research Reviews in Aquatic Ecology: Schmitt; Gaines; Cooper; Holbrook
S. Plant Systematics and Evolution: Schneider; Wilken
T. Parasitology: Kuris
TE. Theoretical Ecology and Evolution: Nisbet
Z. Ecological Physiology: Childress

596. Directed Reading and Research
(2-12) STAFF
Prerequisite: consent of instructor. May be repeated for credit in combination with Biology 596 up to half of the graduate units required for the M.A. degree.

Hours and credit by arrangement with faculty.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF
Prerequisites: graduate standing and consent of instructor. May be repeated for credit in combination with Biology 597. No unit credit allowed toward advanced degree. Students are limited to 24 units per examination, and 12 units per quarter.

Individual study for M.A. comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisites: M.A. (thesis) candidate and consent of committee chair. May be repeated for credit in combination with Biology 598 to a maximum of 12 units. No unit credit allowed toward advanced degree.

For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Preparation
(1-12) STAFF
Prerequisites: Ph.D. candidate and consent of instructor. May be repeated for credit in combination with Biology 599 to a maximum of 12 units.

For writing of the dissertation.

Economics

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Faculty

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Susan Block, M.B.A., University of Wisconsin, Lecturer (accounting, finance)

Henning Bohn, Ph.D., Stanford University, Professor (macroeconomics, fiscal and monetary policy, international economics)

Robert L. Crouch, Ph.D., University of Essex, Professor (economic theory)

William S. Comanor, Ph.D., Harvard University, Professor (industrial organization, applied microeconomics)

Robert T. Deacon, Ph.D., University of Washington, Professor (natural resource economics, public finance)

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Clement G. Krouse, Ph.D., UC Los Angeles, Professor (industrial organization, capital theory)

Peter J. Kuhn, Ph.D., Harvard University, Professor (labor economics)

Stephen LeRoy, Ph.D., University of Pennsylvania, Professor (macroeconomics, monetary economics, finance)

Donald R. Loster, C.P.A., B.S., Woodbury College, Lecturer (accounting)

John Marshall, Ph.D., Massachusetts Institute of Technology, Professor (economic theory, economics of uncertainty)

Carol McAusland, Ph.D., University of Michigan, Assistant Professor (international trade, environmental economics, natural resources)

Rajnish Mehra, Ph.D., Carnegie Mellon University, Professor (capital markets, corporate finance, international finance, capital and growth theory)

Lloyd J. Mercer, Ph.D., University of Washington, Professor (economic history, water resource economics, microeconomic theory)

W. Douglas Morgan, Ph.D., UC Berkeley, Professor (public finance, applied microeconomics, water-resource economics)

Mary J. Nisbet, Ph.D., University of Glasgow, Senior Lecturer with Security of Employment (finance, accounting)

Glenn Owen, C.P.A., B.A., UC Los Angeles, Lecturer (accounting)

Llad Phillips, Ph.D., Harvard University, Professor (labor economics, econometrics, economics of criminal justice)

Christopher Proulx, Ph.D., University of Michigan, Assistant Professor (game theory, bargaining and experimental economics)

Cheng-Zhong Qin, Ph.D., University of Iowa, Associate Professor (microeconomics, game theory)

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Jati K. Sengupta, Ph.D., Iowa State University, Professor (econometrics, operations research, economic development)

Perry Shapiro, Ph.D., UC Berkeley, Professor (microeconomic theory, public economics, econometrics)

Jon Sonstelie, Ph.D., Northwestern University, Professor (urban economics, public finance)

Douglas Steigerwald, Ph.D., UC Berkeley, Associate Professor (econometrics, macroeconomics)

Charles Stuart, Ph.D., University of Lund, Professor (public finance, economic theory, law and economics)

Richard B. Watson, Ph.D., UC Santa Barbara, Lecturer (natural resource economics, accounting, economic theory)

Emeriti Faculty

Alec P. Alexander, Ph.D., UC Berkeley, Professor Emeritus (microeconomics, organization theory)

Mortimer Andron, Ph.D., University of Illinois, Professor Emeritus (finance, investments)

William F. Kennedy, Ph.D., University of Wisconsin, Professor Emeritus (history of economic thought, business ethics)

Walter J. Mead, Ph.D., University of Oregon, Professor Emeritus (natural resource economics)

John E. Pippenger, Ph.D., UC Los Angeles, Professor Emeritus (open economy-macroeconomics, monetary economics)

John G. Traller, C.P.A., M.B.T., University of Southern California, Lecturer Emeritus (accounting)

Harold L. Votey, Jr., Ph.D., UC Berkeley, Professor Emeritus (economics of criminal justice, international trade, economic development)

The undergraduate programs in economics, business economics, and economics/mathematics are designed to serve several objectives. Completed in combination with other courses in the College of Letters and Science, the majors provide the opportunity for general cultural and intellectual development. They are particularly useful as preparation for professions such as law, journalism, and accounting. The economics and economics/mathematics majors provide a solid foundation for graduate study in economics or administration, and the business economics major is a good basis for graduate work in administration and management.

Academic counseling is available for undergraduates from the undergraduate advisor and peer advisors, and for graduate students from the advisor for graduate affairs. *Undergraduate Study in Economics*, published annually for majors and prospective majors, addresses questions most frequently asked by students in each major offered by the Department of Economics. Brochures describing the M.A. and Ph.D. programs in economics are also available.

The Department of Economics encourages majors to participate in the Education Abroad Program (EAP) and the University of California, UCSB Washington Center option. In most cases, EAP courses can be substituted for equivalent offerings of the Department of Economics to fulfill major requirements.

Students with a bachelor's degree in economics who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Senior Honors Program

The senior honors program in the Department of Economics encourages seniors to excel in economics and provides a means of recognizing outstanding scholastic achievement. Students who have completed at least 105 quarter units with a minimum grade-point average of 3.50 may apply for the program. This program requires a faculty-supervised senior honors project. Specially designed advance topic seminars are offered to provide support for these projects. Upon successful completion of the honors project, students will be eligible for "Distinction in the Major" status upon graduation. For details and application forms, contact the Undergraduate Office, North Hall 2121.

Undergraduate Program

Bachelor of Arts—Economics

Before admission to the economics or business economics major, students must complete all economics preparation for the major courses with a grade-point average of 2.70 or above; these courses may not be taken on a passed/not passed basis. Students may declare a pre-economics/business economics major after they have completed at least three courses required for the pre-major with at least a 2.70 grade-point average in all pre-major courses completed at that time. Students who declare the pre-major are responsible for satisfying degree requirements in effect at the time they declare the major. Pre-major status does not, however, guarantee admission to full major status. Students must maintain a continuous 2.00 grade-point average in all major courses (preparation and upper-division) while attending the University of California. At its discretion, the department may discontinue students from the major who do not maintain the continuous 2.00 grade-point average in all pre-major and major courses. When preparation requirements are satisfied, students must complete a change of major petition, available in the Economics Undergraduate Office.

Preparation for the major. To qualify for admission into the economics major, students must complete Economics 1, 2, 3A, 3B, and PSTAT 5E with a grade-point average of 2.70 or above. In addition, students must complete Mathematics 34A-B or 3A-B and Writing 109AC or 109EC or 109SS with a grade of C or above. (*Note: Mathematics 3A-B are prerequisites to some upper-division economics courses.*) Upper-division students transferring to the major may take Economics 109 rather than Economics 1 and 2. See the economics undergraduate advisor for further details.

Upper-division major. Thirty-six upper-division units in economics, including Economics 100A or 104A, 100B or 104B, and 101 or 105, are required. Students may choose the remaining 24 units from upper-division economics courses with at least four of the six upper-division electives selected from the following list: Economics 111, 112A-B, 113A-B, 114, 115, 116, 117A, 119, 120, 122, 128, 130, 133, 135, 140A, 150, 155, 160, 171, 175, 180, 181. The following restrictions apply to the major: Economics 109 may not be used to fulfill upper-division requirements; credit is not allowed for both Economics 100A and 104A, 100B and 104B, or 101 and 105. A maximum of 12 units of Economics 199 will apply to the upper-division major.

Bachelor of Arts—Business Economics

Preparation for the major. Preparation for the major course and grade-point average requirements are identical to those required for the economics major outlined above.

Upper-division major. Forty upper-division units in business economics, including Economics 100A or 104A, 100B or 104B, 101 or 105, and 134A are required. Two upper-division electives must be chosen from the following: Economics 106, 116, 117A, 119, 130, 133, 134B, 135, 140A-B, 150, 155, 171, 175, 180, 181, 185. Additionally, four upper-division economics electives must be completed including at least two from the following: Economics 106, 116, 117A, 118, 119, 130, 132, 134B, 135, 136A-B-C, 137A-B, 138A-B, 139, 140A-B, 150, 155, 170, 171, 175, 180, 181, 182, 185. The same course(s) may not be used to fulfill requirements in both sections listed above. The following restrictions apply to the major: Economics 109 may not be used to fulfill upper-division requirements; credit is not allowed for both Economics 100A and 104A, 100B and 104B, or 101 and 105. A maximum of 12 units of Economics 199 will apply to the upper-division major.

Emphasis in Accounting

The emphasis will appear on the student's official transcript. The degree is listed as a bachelor of arts in business economics.

Preparation for the major. See the preparation for the major requirements for the business economics major. Economics 3A-B are prerequisites to the upper-division accounting courses.

Upper-division major. Forty-nine upper-division units in economics, including the following required courses: Economics 100A or 104A, 100B or 104B, 101 or 105 and 134A. Two upper-division economics electives must be chosen from the following: Economics 106, 116, 117A, 119, 130, 133, 134B, 135, 140A-B, 150, 151, 155, 170, 171, 175, 180, 181, 185. In addition, Economics 118, 136A and 137A must be taken along with any three classes from the following list: 132, 136B-C, 137B, 138A-B, 139, 182.

Bachelor of Arts—Economics/Mathematics

Preparation for the major. Before admission to the economics/mathematics major, students must complete all preparation for the major courses with a grade-point average of 2.50 or above; these courses may not be taken on a passed/not passed basis. The following courses are required: Economics 1 and 2 (or 109); Mathematics 3A-B-C, 5A-B-C, and 8; and PSTAT 5E. Upper-division students transferring

to the major may substitute Economics 109 for Economics 1 and 2.

Note: Physics 1 or 6A is prerequisite to Mathematics 5A-B-C.

Upper-division major. Forty-four upper-division units are required, including the following courses: Economics 104A-B, 105, Mathematics 108A-B, 117. Students must also complete Economics 140A-B and 12 upper-division economics elective units. Economics 109 cannot be used to fulfill the upper-division requirements. Students should consult closely with their advisor in the Department of Economics or Mathematics to assure an appropriate program of study.

Graduate Program

Applicants must fulfill University requirements for admission to graduate status described in the chapter "Graduate Education at UCSB" in addition to the departmental requirements for admission detailed below.

Master of Arts—Economics

Admission

An undergraduate major in economics is not required for admission to the graduate program. However, the department does require that specific courses, particularly economic theory, be passed with distinction. One quarter of statistics and at least two quarters of calculus are required. One year is recommended. With departmental consent, students with inadequate preparation in economics or mathematics may be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses.

The Graduate Record Examination (GRE) is required of all applicants to the graduate program. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper-based test or 213 when taking the computer-based test, taken within two years of their application to UCSB.

Degree Requirements

The M.A. may be obtained under either of the two plans described below, both of which require passing a comprehensive examination. There is no thesis option for the M.A. in economics. There is no language requirement for the M.A. degree. Well-prepared students can obtain the M.A. in one year. Plan A is designed for students who wish specifically to acquire the M.A. degree; Plan B is designed for students in the Ph.D. program who wish to acquire the M.A. degree.

Plan A: Thirty-six units of coursework, including 20 units of core courses—Economics 205A-B, 208, and 240A-B—that must be passed with a grade of B or better in each course, along with 16 units of elective field courses. Students who wish to obtain the M.A. with an emphasis in business economics must complete the same 20 units of core courses with a grade of B or better in each course, and take Economics 234A-B, 240C, and 273A as additional required courses. Plan A, with or without the emphasis in business economics, requires successful completion of a comprehensive oral examination that covers microeconomic theory, quantitative methods, and either macroeconomics or an elective field at the discretion of the student. (Note: All graduate students who follow the comprehensive exam option are required to complete a minimum of 24 units of graduate-level units in courses numbered 200-299 or 596.)

Plan B: Thirty-six units of core courses must be completed with a grade of B or better: Economics 204A-B, 210A-B-C-D, 241A-B-C. The Ph.D. preliminary examinations in microeconomic theory and econometrics must be passed with an M.A. Pass or better in order to receive a master of arts degree.

Five-Year Combined Bachelor of Science Engineering/Master of Arts Economics—Business Economics Emphasis

A program which combines a B.S. in any engineering major (including computer science) with a master of arts in economics with an emphasis in business economics provides an opportunity for outstanding engineering undergraduates to earn both degrees in five years. Information about these programs is available in the College of Engineering Undergraduate Office or from the Department of Economics Graduate Office. Interested students should inform the Economics Graduate Office of their interest in the program at the end of the sophomore year in order to plan their upper-division classes appropriately.

Doctor of Philosophy—Economics

Admission

An undergraduate major in economics is not required, but the department does require that specific courses, particularly economic theory, be passed with distinction. Prospective students are advised to take as much mathematics as possible: a mathematical statistics course, a year of calculus, and a course in matrix algebra are indispensable. An additional year of calculus and some coursework in linear algebra are highly recommended. Applicants with distinguished records in economics or other fields who lack some prerequisites may be admitted to the Ph.D. program, but they are required to make up deficiencies through appropriate coursework. This coursework is determined on an individual basis and completed in the student's first year. Then the student proceeds in the Ph.D. program.

The Graduate Record Examination (GRE) is required of all applicants to the graduate program. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 600 when taking the paper-based test or 250 when taking the computer-based test, taken within two years of their application to UCSB. Successful applicants typically score above 620, or 260 when taking the computer-based test.

Master's degree students in economics at UCSB are admitted to the first-year Ph.D. sequence by a selection committee that meets in June. Successful applicants have distinguished grades in all of their master's coursework. The same committee reviews the records of Ph.D. students who are making up prerequisites by taking undergraduate and master's courses and determines their eligibility to begin the first-year Ph.D. sequence.

Degree Requirements

Ph.D. students must successfully complete one year of required courses in microeconomic theory (Economics 210A-B-C-D), macroeconomic theory (Economics 204A-B), and econometrics (Economics 241A-B-C). The microeconomic theory and econometrics courses must be completed with a grade of B or better in each course. The macroeconomics courses must be passed with a grade of B+ or better in each course. At the end of the first year, students must pass preliminary examinations in microeconomics and econometrics. Grading categories for the preliminary examinations are Fail, M.A. Pass, Ph.D. Pass, and Ph.D. Pass with Distinction. To proceed in the Ph.D. program, students must receive a Ph.D. Pass or better. Those receiving an M.A. Pass or better on both examinations are entitled to the master of arts degree, as long as they fulfill the Plan B requirements for the M.A. degree specified above.

Having succeeded in passing the preliminary examinations with a Ph.D. pass or higher, students take eight elective courses including course sequences in two fields during the second and third years. The fields are industrial organization, macroeconomic theory and policy, public finance, finance, mathematical economics, econometrics, labor economics, and environmental economics and natural resources. In the third year, students write papers that launch their dissertation research. When they complete the papers and defend proposals for the rest of their dissertation in an oral qualifying examination administered by their doctoral committee, they advance to candidacy for the doctorate, an important milestone. The goal is to reach that point within three years. The normal time for completion of the Ph.D. is five years; a few students finish in four years.

Economics Courses

LOWER DIVISION

1. Principles of Economics—Micro
(4) BERGSTROM, CROUCH

Not open for credit to students who have completed Economics 109.

An introduction to microeconomic analysis. Economic theory related to demand, production, competitive and noncompetitive product markets, input markets, and welfare. Applications of microeconomic theory including its use in evaluating and forming public policy.

2. Principles of Economics—Macro
(4) CROUCH, MORGAN

Prerequisite: Economics 1.

Not open for credit to students who have completed Economics 109.

An introduction to macroeconomic analysis. Analysis of income, employment, and the price level.

Applications of macroeconomic theory including its use in evaluating and forming public policy.

3A-B. Financial Accounting
(4-4) NISBET, LOSTER, SANDER

Prerequisite: For 3B: Economics 3A.

Recommended preparation: Economics 1 and 2

A two-quarter series providing an introduction to the purposes, conceptual framework, measurement principles and reporting issues of accounting. Particular emphasis will be placed on the links between accounting, economics, and finance.

UPPER DIVISION

100A. Intermediate Microeconomic Theory
(4) GARRATT, TREJO, STUART, BERGSTROM

Prerequisites: Economics 1 and 2, or Economics 109; and PSTAT 5E; and Mathematics 34A-B.

Credit not given for both Economics 100A and 104A.

Economic theory relating to demand, production, and competitive product markets with emphasis on applications of theory.

100B. Intermediate Microeconomic Theory
(4) BERGSTROM, DEACON, GARRATT, PROULX

Prerequisite: Economics 100A.

Credit not given for both 100B and 104B.

Economic theory relating to imperfectly competitive product markets, input market, and welfare, with emphasis on applications. Includes an introduction to game theory.

101. Intermediate Macroeconomic Theory
(4) MORGAN

Prerequisite: Economics 100A.

Credit not given for both 101 and 105.

Recommended preparation: Economics 100B.

Contemporary analysis of income, employment, price level, and public policy using static general equilibrium framework with emphasis on applications of theory. Long term economic growth is also covered.

104A. Intermediate Microeconomic Theory
(4) QIN

Prerequisites: Economics 1; and, Economics 2 or 109; and Mathematics 3A-B-C.

Credit not given for both Economics 104A and 100A.

Economic theory relating to demand, production, and competitive product markets, using techniques from the calculus.

104B. Intermediate Microeconomic Theory
(4) QIN

Prerequisite: Economics 104A.

Credit not given for both Economics 104B and 100B.

Economic theory relating to imperfectly competitive product markets, input markets, and welfare, using techniques from the calculus. Basic capital theory and game theory are covered.

105. Intermediate Macroeconomic Theory
(4) STAFF

Prerequisites: Economics 1 and 2, or Economics 109; and Mathematics 3A-B-C.

Not open for credit to students who have completed Economics 101.

Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on pure theory and use of techniques from the calculus.

106. Managerial Economics
(4) SENGUPTA

Prerequisites: Mathematics 3A-B or 34A-B; and, Economics 100A-B or 104A-B.

Economic principles will be applied to practical decision-making situations. Methods of price and output determination, capital budgeting, and choices under uncertainty. Methods of economic analysis and their application will be emphasized.

109. Introduction to Economics
(4) WATSON, PHILLIPS

Prerequisite: upper-division standing.

Not open to students who have taken Economics 1 and 2. 2 units of credit will be allowed for Economics 109 if credit has already been given for Economics 1 or 2 or the equivalent. Economics majors are advised to take Economics 1 and 2 for a more thorough background for the major. Does not count as an upper-division major elective.

Intensive study of economic principles.

111. Economic History of Ancient Civilization
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

A survey of the economies of the ancient Near East, Egypt, Greece, and Rome with emphasis on important issues in their economic history.

112A. European Economic History to 1850
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

Analysis of the economic development of Europe from the Middle Ages through the English Industrial Revolution.

112B. European Economic History Since 1850
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

Analysis of the economic development of Europe since the English Industrial Revolution.

113A. Economic History of the United States to 1900
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

Key issues and episodes in American economic history, such as the sources of economic growth, slavery and the nineteenth century southern economy. Populism and the rise of regulation, and macroeconomic history.

113B. Twentieth Century United States Economic History
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

A survey of United States economic development in the twentieth century with emphasis on issues related to the growth, instability, and distribution of income. The impact of public policy on economic growth, instability, and income distribution will be an important theme of the course.

114. Economic Development
(4) FUNKHOUSER

Prerequisites: Economics 1 and 2; or Economics 109.

Recommended preparation: Economics 100A.

Applications of economic theory to the problems of developing nations.

115. Environmental Economics
(4) KOLSTAD

Prerequisite: Economics 100A-B.

Same course as Environmental Studies 175.

Course provides a rigorous treatment of environmental economics. Topics include welfare analysis, ethical dimensions of economic criteria for protecting the environment, measuring the demand for environmental goods, property rights, economic incentives, including marketable permits and emission fees, and regulating risk.

116. Organization of Industry
(4) KROUSE, COMANOR

Prerequisite: Economics 100B or 104B.

Analysis of competition, monopolistic competition, oligopoly, and monopoly theories and practices.

117A. Law and Economics I
(4) FRECH

Prerequisite: Economics 100B or 104B.

Application of economic analysis to the law. Includes an introduction to common law, constitutional law, and legal processes. Topics may include property law, contract law, and tort law.

118. Financial Accounting Analysis and Planning
(4) BLOCK, WATSON, LOSTER, MAASS

Prerequisites: Economics 2 and 3B; and PSTAT 5E.

An economic analysis of financial statements in a macroeconomic environment. Topics include evaluation of short term and long term liquidity, profitability, capital structure and the forecast of earnings and financial position using financial and economic models.

119. United States Business History
(4) MERCER

Prerequisites: Economics 1 and 2; or Economics 109.

A survey of the development and change of business organization in the United States in the context of the growth and development of the economy and changes in society. Particular attention is paid to the relationship between business and government.

120. Urban and Regional Economics
(4) SONSTELIE

Prerequisite: Economics 100B or 104B.

Economic analysis applied to current urban and regional problems.

122. Natural Resource Economics
(4) DEACON

Prerequisite: Economics 100B or 104B.

Same course as Environmental Studies 179.

Microeconomic theory and capital theory applied to problems of conservation and management of natural resources. Analysis of public policy with special emphasis on non-renewable energy resources, management of forests, deforestation and species extinction, and use of fish and game resources.

128. Literature and Economics
(4) DECANIO

Prerequisite: upper-division standing.

Issues in history, political economy and social theory as reflected in major works of literature. Content and readings will vary from quarter to quarter. Extensive writing by students will be required.

129. Public Choice
(4) SHAPIRO

Prerequisites: Economics 100A-B.

Public choice theory examines the relationships between markets and competitive political processes in a free society. This course will present a simplified treatment of the major theoretical political-economic models that have been developed in this area of social science.

130. Public Finance
(4) MORGAN, STUART

Prerequisites: Economics 100B or 104B; and, Economics 101 or 105.

Fiscal theory and policy. Incidence and effects of taxation, government expenditure programs, and benefit cost analysis.

132. Auditing
(4) LOSTER

Prerequisites: Economics 118 and 136A-B-C.

Developing an understanding of concepts and practices for audits of financial statements. Studying professional standards , ethics, and legal liability. The audit process is covered in depth: planning, internal control, audit risk, materiality, evidence, program design, sampling, completing the audit, and reporting.

133. Topics in Macroeconomic Theory
(4) BOHN

Prerequisite: Economics 101 or 105.

Topics may include fiscal policy and government budget deficits, monetary policy and inflation, investment and economic growth, theories of the business cycle, rational expectations and the Lucas critique, optimal taxation and the time consistency of government policies. Content may vary from year to year.

134A. Financial Management
(4) MARSHALL, SONSTELIE, BLOCK

Prerequisites: PSTAT 5E; and, Economics 100B or 104B; and, Economics 101 or 105.

Discounting of certain future cash flows. Principles of evaluation of investment projects.

Demand and supply of investment funds. Risk and the valuation of asset prices. Analysis of a firm's debt and dividend policies; the effect of taxes and inflation on these policies.

134B. Financial Management
(4) BLOCK, LEROY

Prerequisites: PSTAT 5E; and, Economics 100B or 104B; and Economics 134A.

This course is devoted to the testing and application of theories developed in Economics 134A. The specific characteristics and uses of warrants, options, futures, bonds, and stocks are studied. The microcomputer lab may be used for homework projects.

135. Monetary Economics
(4) BOHN

Prerequisite: Economics 101 or 105.

Recommended preparation: Economics 134A.

Survey of monetary theory, the banking system and the supply of money, monetary policy, and current issues.

136A-B-C. Intermediate Accounting
(5-4-4) STAFF

Prerequisites: Economics 3A-B and 118 for 136A. Economics 136A for 136B. Economics 136A-B for 136C.

An in-depth analysis of recognition, measurement, classification, and valuation issues in financial reporting within the framework of generally accepted accounting principles. Case studies and microcomputer analysis software will be integrated into the course.

137A-B. Managerial Accounting
(4-4) WATSON, LOSTER, MAASS

Prerequisites: Economics 1, 2, and 3A-B.

Not open for credit for students who have completed Economics 137.

A two-quarter series covering the theory and application of managerial accounting concepts. The course investigates the interaction between economic theory, financial accounting, and management decision making for planning and control.

138A. Income Taxation
(4) TRALLER

Prerequisites: Economics 3A-B.

Provides an in-depth understanding of federal income taxes as applied to individuals, with an introduction to the taxation of corporations and partnerships. Exploration of the interrelationships between taxation issues for these entities along with the need for and role of tax planning.

138B. Income Taxation
(4) TRALLER

Prerequisite: Economics 138A.

Provides an in-depth understanding of federal income taxes as applied to corporations, partnerships and fiduciaries, and an introduction to international and estate and gift taxation. Emphasis on tax planning, using case studies and tax research.

139. Advanced Accounting
(4) HARMON

Prerequisites: Economics 136A-B-C.

Accounting for business combinations and preparation of consolidated financial statements, partnership formation, operation and liquidation, troubled debt restructuring, foreign currency translation and transactions, and principles of fund accounting.

140A. Introduction to Econometrics
(4) STEIGERWALD

Prerequisites: Economics 101 or 105; and PSTAT 5E.

Estimation and hypothesis testing in classical linear regression models as well as violations of each classical assumption. Discrete dependent variable models and systems of simultaneous equations are also covered.

140B. Introduction to Econometrics
(4) MOON

Prerequisite: Economics 140A.

Time-series econometrics including stationary ARMA models, estimation and hypothesis testing in the presence of unit roots, and financial models with conditional heteroskedasticity.

143. Mathematical Economics
(4) SENGUPTA

Prerequisites: Economics 104B and 105.

Application of mathematics to selected topics in micro- and macroeconomic theory.

150. Labor Economics
(4) FUNKHOUSER

Prerequisite: Economics 100B or 104B.

This course analyzes the determinants of labor supply and labor demand, the decision to invest in schooling, on-the-job training, and other forms of human capital, and the impact of trade unions and racial and sexual discrimination in the labor market.

155. Economics of Insurance
(4) MARSHALL

Prerequisites: Economics 100B and PSTAT 5E.

Topics may include behavior under uncertainty, markets in contingent claims, insurance law and institutions, insurance as financial management, valuation of insurance companies, regulation of insurance, disaster insurance, health insurance, moral hazard, adverse selection, public policy toward insurance.

160. Economics of Crime and Justice
(4) PHILLIPS, VOTEY

Prerequisites: Economics 1 and 2; or Economics 109.

Examines social policy to minimize the losses to crime and the costs of crime control. Develops the economics of crime generation, law enforcement, prosecution, corrections, and punishment.

170. Health Economics
(4) FRECH

Prerequisites: a prior PSTAT course.

Application of economic and statistical principles to health. Topics may include the determinants of health, demand for health care and health insurance, competition and monopoly in health care and insurance of health care, HMOs and managed care plans, public policy and international comparisons.

171. Competitive Strategies
(4) PROULX

Prerequisites: Economics 134A and PSTAT 5E.

Application of game theory and strategic thinking to the analysis of competitive situations.

175. Regulation of Economic Activity
(4) DECANIO

Prerequisites: Economics 100A-B.

Risk management, global environmental protection, and selected topics in economic regulation.

180. International Trade
(4) KJELDSEN, MCAUSLAND

Prerequisite: Economics 100B or 104B.

International trade theory and policies with examples from current issues and problems.

181. International Finance
(4) KJELDSEN, MOON

Prerequisite: Economics 101 or 105.

International money and capital markets and their impact on the domestic and world economies; international financial institutions and policies.

182. International Accounting and Financial Management
(4) NISBET

Prerequisites: Economics 118 and 134A.

Accounting and financial management issues in the multinational enterprise including the global development of accounting and disclosure practice, international reporting and the management of global enterprise resources.

183. Economics of Entrepreneurship
(4) STAFF

Prerequisite: Economics 1 and 2; or Economics 109.

Study of entrepreneurs as risktakers, innovators, combiners of resources, and managers, and of the legal and institutional environments that encourage (and discourage) such activity.

185. Management of Information
(4) BLOCK, OWEN

Prerequisites: Economics 1 or 109; and Economics 3A-B.

This course explores the management of information systems in large organizations. Emphasis is placed on the formation and implementation of organizational strategy as well as management control. Assumes no prior knowledge of computer-based information systems.

190. Selected Studies in Foreign Economies
(4) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated to a maximum of 12 units provided subject content is different.

An analysis of the economy of a particular country.

191AA-ZZ. Special Topics in Economics
(4) STAFF

Prerequisites: open to economics majors only.

May be repeated for credit to a maximum of 8 units. Up to 8 units may be applied to the major providing letter designations are different.

Lectures in special areas of interest in economics. Consult the department office regarding proposed course topics.

194AA-ZZ. Group Studies
(1-4) STAFF

Prerequisites: upper-division standing; and consent of instructor.

Students may repeat this course up to 12 units; however, only 4 units may count toward the major.

Intensive study and research on a topic in economics selected by the student with the guidance and approval of a faculty member.

19SH. Senior Honors Seminar—Accounting
(4) STAFF

Prerequisite: consent of instructor.

May be repeated once for credit.

Seminar format for accounting students to discuss advanced accounting theory and concepts. FASB pronouncements selectively reviewed for their conceptual background; students will research current agenda items before the FASB. Guest speakers from various accounting professions will supplement the lectures.

196H. Senior Honors Seminar
(4) LEROY

Prerequisite: admission to Department of Economics senior honors program.

May be repeated once for credit.

Students conduct independent research which is presented and discussed in class. Strong emphasis on written communication.

199. Independent Studies in Economics
(1-5) STAFF

Prerequisites: upper-division standing in the major; completion of two upper-division courses in economics; consent of department and instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Only 12 units of Economics 199 may apply toward the major.

Coursework shall consist of academic research supervised by a faculty member. This course is not intended for internship credit.

199RA. Independent Research Assistance in Economics
(1-5) STAFF

Prerequisites: upper-division standing in the major; completion of two upper-division courses in economics; consent of department and instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research.

GRADUATE COURSES

204A. Macroeconomic Theory
(4) BOHN

Prerequisites: Economics 210A-B.

Introduction to modern macroeconomics. Study of economic growth and dynamic optimization. Representative agent, overlapping generations and monetary models will be covered.

204B. Macroeconomic Theory
(4) STAFF

Prerequisite: Economics 204A.

Modern business cycle analysis, fiscal and monetary policy in a dynamic framework.

205A-B. Economic Decisions
(4-4) COMANOR

Prerequisites: Economics 100A-B or 101; knowledge of differential calculus and economic theory.

This course presents the basic concepts of microeconomics by emphasizing their application to actual situations and their use in problem-solving. It covers the theory of choice in the first term and the theories of the firm and of markets in the second.

206. Operations Research
(4) SENGUPTA

Prerequisite: Economics 205A or 205B.

Topics in applied methods of operations research selected from stochastic programming, efficiency measurement, inventory control, and queuing.

208. Topics in Macroeconomic Theory and Policy
(4) STAFF

Prerequisites: Economics 100A-B and 101.

Keynesian, New-Classical, New-Keynesian theory of income determination, and policy prescriptions thereof. Additional topics include rational expectations and policy effectiveness, introduction to the intertemporal approach in macroeconomics, modern business cycle theory, and theory and evidence on economic growth.

209. Introduction to Operations Management
(4) SENGUPTA

Prerequisite: Mathematics 3B.

Linear and non-linear programming, queuing theory, inventory theory, and other topics in operations research with applications to business and economics.

210A. Microeconomic Theory
(4) FRECH, KROUSE

Prerequisites: Mathematics 3A-B-C and Economics 104A-B.

Methodology, theory of markets, exchange, competitive equilibrium, monopoly, price discrimination, oligopoly, asymmetric information.

210B. Microeconomic Theory
(4) GARRATT

Prerequisites: Mathematics 3A-B-C and Economics 104A-B.

Theory of firms and consumers. Profit maximization, cost minimization, duality, utility maximization, revealed preference, consumers' surplus.

210C. Microeconomic Theory
(4) PROULX, QIN

Prerequisites: Economics 210A-B.

General equilibrium theory. Topics include market exchange, Walrasian equilibrium, stability, fundamental theorems of welfare economics, bargaining foundations of Walrasian equilibrium, public goods and Lindahl equilibrium, private provision of public goods, externalities and Coase theorem.

210D. Microeconomic Theory
(4) MARSHALL

Prerequisite: Economics 210C.

Capital theory and uncertainty. Expected utility, risk aversion, general equilibrium over states and over time, capital asset pricing model.

214A. Economic Development
(4) FUNKHOUSER, SENGUPTA

A study of problems faced by the less developed countries. Elements of new growth theory. Endogenous growth and learning by doing. Topics considered include population growth, labor supply, capital accumulation, openness in trade, and technological change.

216A-B. Organization of Industry
(4-4) COMANOR, FRECH, KROUSE

Theoretical and empirical analyses of "imperfect" competition. Individual or firm optimization and market equilibrium are considered. Topics include oligopoly, monopolistic competition, information, determinants of market structure, complex pricing, vertical relations. Antitrust, regulatory, and government ownership policies will be examined.

229. Macroeconomics Theory and Policy
(4) BOHN

Prerequisites: Economics 204A and 204B.

Covers dynamic fiscal policy, including optimal taxation and government debt management, time consistency problems of fiscal and monetary policy, government budget deficits and their effects on the economy, and other advanced topics in macroeconomics.

230A-B. Public Finance
(4-4) BERGSTROM, SHAPIRO, SONSTELIE, STUART

A. Public goods, taxation, and expenditure theory.

B. Topics vary: public debt management and fiscal policy; advanced topics in public expenditure and taxation theory; analysis of collective choice, political processes, and group decision-making.

230C. Public Finance
(4) SONSTELIE

Prerequisites: Economics 230A-B.

Reading and discussion of selected topics and recent literature in public finance and public economics. Emphasis on the development of dissertation research topics. Student presentations required. Course outline and readings will vary from quarter to quarter.

234A. Introduction to Finance
(4) MEHRA

Basic principles of financial management and an introduction to the subjects covered in subsequent courses in the Economics 234 sequence. Topics include financial planning, investment criteria, capital structure, and principles of asset valuation.

234B. Theory of Finance
(4) MEHRA

Rigorous treatment of asset pricing theory. The economics of intertemporal choice and choice under uncertainty are developed and applied to financial markets. Theories of asset pricing are covered including the capital asset pricing model, arbitrage pricing theory, and option pricing theory.

235A. Money and Finance
(4) LEROY

Prerequisite: Economics 210A-B or 204A.

Individuals' optimal consumption/portfolio choice under uncertainty and implied asset valuation. Rigorous treatment of both the traditional linear asset pricing relations; mean-variance CAPM and APT, and the equilibrium valuation; consumption-based intertemporal asset pricing models.

235B. Money and Finance
(4) LEROY, MEHRA

Prerequisites: Economics 210D; and, Economics 204A or 208; and Economics 235A.

Covers the integration of dynamic capital theory and the theory of finance, multiperiod general equilibrium pricing models and tests of those models.

235C. Topics in Finance
(4) STAFF

Prerequisites: Economics 235A-B.

Reading recent papers in finance and conducting original research.

236. International Financial Management
(4) NISBET

Prerequisites: Economics 234A-B.

Financial management and reporting in an international context, including the role of the multinational corporation in global markets, international financial reporting and investment and planning in the MNC.

237. Financial Management
(4) WATSON

Prerequisite: consent of instructor.

An introduction to concepts from accounting, economics, and finance crucial to understanding the operation of business firms in a market economy. Topics include costs, profits, supply, demand, inflation, capital markets, present value, risk, debt, equity, balance sheets, and income statements.

240A. Introduction to Econometrics
(4) SHAPIRO

Prerequisite: PSTAT 5E.

Not open for credit to students who have completed Economics 207.

Review of probability and statistics followed by either regression theory and application or baysesian decision theory. Regression theory covers the subject through Gauss-Markov theorem. Discussion of the theory and application of diagnostic statistical tests.

240B. Econometrics with an Emphasis on Cross Section Analysis
(4) FRECH

Prerequisite: Economics 240A.

Not open for credit to students who have completed Economics 247.

Extension to multiple regression analysis. Study of various problems, such as heteroskedasticity, serial correlation, and non-orthoganal errors. Emphasis on nested hypothesis testing.

240C. Econometrics with an Emphasis on Time Series and Forecasting
(4) PHILLIPS

Prerequisite: Economics 140A or 240B or 241C.

Not open for credit to students who have completed Economics 246.

Time series econometrics with an emphasis on business forecasting. Study of various methods of econometric forecasting including statistical decision theory, Box-Jenkins, adaptive methods, single and simultaneous structural equation models.

241A. Econometrics
(4) BOHN

Prerequisites: Mathematics 3A-B-C.

Elements of probability and statistics for econometrics. Probability density functions, moment-generating functions, central limit theorems, method of maximum likelihood.

241B. Econometrics
(4) STEIGERWALD

Prerequisite: Economics 241A.

The intuition and theory underpinning estimation of single and multiple equation regression models.

241C. Econometrics
(4) STAFF

Prerequisite: Economics 241B.

Covers extension of the general linear model, simultaneous equations estimation, identification, dynamic model structure, and limited dependent variable estimation. Emphasis is given to both theoretical development and applications of the basic theory.

242. Game Theory
(4) QIN

Prerequisites: Economics 210B-C; Mathematics 118.

Not open for credit to students who have completed Economics 244B.

Cournot-Nash equilibrium, bargaining theory, value, and their modern variations including Bayesian-Nash equilibrium and evolutionary stable strategy. Nonequilibrium solution concepts (dominance and rationalizability). Applications to oligopoly, signaling, principal-agent problem, and organization or firms.

243. Computational Laboratory in Economics
(4) DECANIO

Introduction to computational economics. Laboratory in social science models. Agent-based modeling, complexity in organizations and markets, evolution and genetic algorithms, the emergence of order, and the policy implications of computational economics. Research project required.

244. Mathematical Economics
(4) PROULX, SENGUPTA

Prerequisites: Economics 201 or 249; and Economics 210A-B-C-D; and Mathematics 118.

Not open for credit to students who have completed Economics 244A.

Economic efficiency and stability in general equilibrium models, theory of the core and competitive markets, turnpike theorems in optimal growth theory and selected topics from recent developments in mathematical economics.

245A. Econometric Theory
(4) STEIGERWALD

Prerequisite: Economics 241C.

The logic and structure of empirical work. In order: how to quantify theory; sources of data; methods of estimation; informative reporting of results.

245B. Econometric Theory
(4) STEIGERWALD

Prerequisite: Economics 241C.

Methods of time-series analysis including: stationary VARMA models; spectral analysis; EM algorithm; unit-root processes and cointegration; fully-modified estimators; error-correction models; and conditional heteroskedasticity models.

245C. Econometric Theory
(4) STAFF

Prerequisite: Economics 241C.

Limited-dependent variables and panel data. Methods for qualitative variables and truncated and censored samples; analysis of covariance and variance components techniques for continuous panel data; analysis of discrete-state, discrete-time and discrete-state, continuous-time models.

249. Dynamic Optimization
(4) GARRATT

Prerequisite: Economics 210B or Mathematics 118.

Not open for credit to students who have completed Economics 201.

An introduction to the dynamic optimization techniques of the calculus of variations and optimal control theory. Focus on continuous time planning problems in a deterministic setting. Applications include natural resource extraction, energy production, human capital accumulation, and insurance.

250A-B-C. Labor Economics
(4-4-4) FUNKHOUSER, PHILLIPS

A. Theory and estimation of input demand; econometrics of demand systems; household production models.

B. Labor market equilibrium; implicit contracts theory; information and uncertainty in labor market; union behavior.

C. Theory and estimation of labor supply models; human capital and income distribution; labor mobility; economics of discrimination.

260A. Natural Resources
(4) DEACON, KOLSTAD

Capital theory and welfare economics applied to the primarily dynamic questions concerning the use of nonrenewable resources such as minerals, the use of renewable resources such as fisheries and forests, and the preservation of species and natural environments.

260B. Environmental Economics
(4) KOLSTAD

The primarily static theory of externalities and their correction. Covers basic theory of public bads and externalities, regulation theory related to environmental problems and applications, the valuation of environmental goods, transboundary pollution, and international trade and the environment.

273A-B-C. Managerial Accounting
(4-4-4) NISBET, WATSON

A. A course concerned with financial statements that are made available to creditors, stockholders, and other interested parties. The goal is to engender a knowledge of the measurement methods used by accountants and the ability to evaluate these methods.

B. The use of accounting as an instrument of financial planning and control. The goal is to build up an appreciation of the importance of planning and control within a business organization and an understanding of the methods and procedures used in practice and of the problems encountered in their use.

C. A course building on Economics 273A designed to assist the external user of financial statements to best use these data in the decision making process. To that end, the process of adjusting the statements to improve the measurements and the tools available to analyze the statements are used.

280A. Theory of International Trade
(4) MCAUSLAND

Topics include the sources of gains from trade and comparative advantage, static and dynamic trade models, trade under increasing returns to scale and imperfect competition, and strategic trade policy.

280B. International Finance
(4) STAFF

Prerequisite: Economics 204A.

Topics include current account dynamics, international risksharing, the transmission of business cycles, the determination of exchange rates, and sovereign debt.

281. Monetary Economics
(4) STAFF

Prerequisite: Economics 204A.

Examines the role of money in facilitating exchange, the links between the money supply and other macroeconomic aggregates, and the effects of monetary policy.

292. Field Research in Economics
(1-12) STAFF

Directed field research on a topic in economics.

293. Third Year Graduate Seminar
(4) STAFF

Students present and discuss their original research papers.

294. Microeconomics Seminar
(4) STAFF

Current topics in microeconomics.

295. Macroeconometrics
(4) STAFF

A seminar course with invited speakers on the topics of econometrics, finance, international economics, and macroeconomics.

297. Seminar on the Teaching of Economics.
(2) MORGAN

Prerequisite: graduate standing.

Seminar and laboratory work covering the planning, presenting, and evaluating instruction.

592. Teaching in Economics
(4-S) STAFF

No unit credit allowed toward advanced degree.

Teaching assistant: leads discussion of topics covered in faculty lecture. Associate: assumes full responsibility for the teaching of one or more courses.

593. Research in Economics
(4) STAFF

No unit credit allowed toward advanced degree.

Research under the direction of a faculty member.

594AA-ZZ. Special Topics in Economics
(1-4) STAFF

Prerequisites: graduate standing and consent of instructor.

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies in Economics
(4) STAFF

Prerequisites: graduate standing and consent of instructor.

Critical review of research in selected fields.

596AA-ZZ. Directed Reading and Research
(2-4) STAFF

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF

Prerequisites: graduate standing and consent of instructor.

No unit credit allowed toward advanced degree.

Instructor should be the student's major professor or chair of the doctoral committee.

598. Master's Thesis Research and Preparation
(1-12) STAFF

Prerequisites: graduate standing and consent of instructor.

No unit credit allowed toward advanced degree.

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

599AA-ZZ. Dissertation Research and Preparation
(1-12) STAFF

Prerequisites: graduate standing and consent of instructor.

Only for research underlying the dissertation, writing the dissertation. Instructor should be the chair of the student's doctoral committee.

English

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Division of Humanities and Fine Arts,
South Hall 2607;
Telephone (805) 893-3441

E-mail: englishinfo@humanitas.ucsb.edu
Web site: www.english.ucsb.edu

Department Chair: Mark Rose

Faculty

H. Porter Abbott, Ph.D., University of Toronto, Professor (narrative, autobiography, 19th- and 20th-century literature)

Steven Allaback, Ph.D., University of Washington, Professor (fiction, American literature, fiction writing)

Charles Bazerman, Ph.D., Brandeis University, Professor (cultural studies of science and technology, writing in society, rhetoric, discourse theory)

Sheridan Blau, Ph.D., Brandeis University, Senior Lecturer with Security of Employment (English education, 17th-century literature)

Lee Bliss, Ph.D., UC Berkeley, Professor (Renaissance literature, drama)

Maurizia Boscagli, Ph.D., Brown University, Associate Professor (gender studies, modern literature)

Elliott Butler-Evans, Ph.D., UC Santa Cruz; Associate Professor (Marxist cultural theory, gender and sexuality studies, narrative theory, cultural semiotics, African-American literature and culture)

Julie Carlson, Ph.D., University of Chicago, Associate Professor (English Romantic literature, feminist theory)

Elizabeth Heckendorn Cook, Ph.D., Stanford University, Associate Professor (18th-century literature)

Christopher Craft, Ph.D., UC Berkeley, Assistant Professor (19th-century British literature, gender studies)

Andrew E. Duffy, Ph.D., Harvard University, Associate Professor (English literature, post-colonial literature, Irish literature)

Robert A. Erickson, Ph.D., Yale University, Professor (17th- and 18th-century English literature)

Louise Fradenburg, Ph.D., University of Virginia, Professor (medieval literature)

Patricia Fumerton, Ph.D., Stanford University, Professor (Renaissance literature and culture)

Giles Gunn, Ph.D., University of Chicago, Professor (American literature and critical theory)

Carl Gutierrez-Jones, Ph.D., Cornell University, Associate Professor (Chicano and American literature)

Richard Helgerson, Ph.D., Johns Hopkins University, Professor (literature and culture of the English Renaissance)

Paul Z. Hernadi, Ph.D., University of Vienna and Ph.D., Yale University, Professor (literary theory, history of criticism, comparative literature, modern drama)

Alycee J. Lane, Ph.D., UC Los Angeles, Assistant Professor (20th-century American literature, African-American literature, gay and lesbian literature)

Stephanie LeMenager, Ph.D., Harvard University, Assistant Professor (19th-century American literature)

Shirley Geok-Lin Lim, Ph.D., Brandeis University, Professor (Asian-American literature, post-colonial literature, ethnic and feminist writing)

Alan Y. Liu, Ph.D., Stanford University, Professor (Romantic literature, literary theory, literature and information culture)

David Marshall, Ph.D., Johns Hopkins University, Professor (18th-century European literature)

Mark Maslan, Ph.D., UC Berkeley, Associate Professor (American literature)

Christopher Newfield, Ph.D., Cornell University, Associate Professor (American literature)

Michael O'Connell, Ph.D., Yale University, Professor (Renaissance poetry and drama)

Carol Braun Pasternack, Ph.D., UC Los Angeles, Associate Professor (medieval studies)

John Ridland, Ph.D., Claremont Graduate School, Professor (writing, poetry, teaching of writing and poetry)

Mark Rose, Ph.D., Harvard University, Professor (Shakespeare, early modern cultural studies, authorship and intellectual property)

Garth St. Omer, M.F.A., Columbia University, Ph.D., Princeton University, Professor (modern fiction and the writing of fiction)

Elisa Tamarkin, Ph.D., Stanford University, Assistant Professor (19th-century American literature)

Kay Young, Ph.D., Harvard University, Assistant Professor (Victorian literature, the novel)

Candace Waid, Ph.D., Yale University, Associate Professor (regional American literature)

William B. Warner, Ph.D., Johns Hopkins University, Professor (18th-century literature, the novel, history and theory of media, technology and literature)

Everett Zimmerman, Ph.D., Temple University, Professor (18th-century satire, the novel)

Emeriti Faculty

Michael A. Fernandez, M.A., California State University, San Francisco, Lecturer Emeritus

Donald Guss, Ph.D., University of Wisconsin, Professor Emeritus (English literature 1500-1660, Italian Petrarchism, Renaissance-literary history)

Edward Loomis, Ph.D., Stanford University, Professor Emeritus

William S. Marks III, Ph.D., Stanford University, Professor Emeritus (19th-century American fiction, modern-British and Continental fiction)

J. Chesley Mathews, Ph.D., UC Berkeley, Professor Emeritus

Patrick J. McCarthy, Ph.D., Columbia University, Professor Emeritus (Victorian literature)

Stephen Miko, Ph.D., Yale University, Professor Emeritus (modern novel)

Donald Pearce, Ph.D., University of Michigan, Professor Emeritus

Anne Pidgeon, M.A., University of Michigan, Lecturer with Security of Employment Emerita

Logan Speirs, M.A., Cambridge University, Professor Emeritus (English and comparative literature)

T.R. Steiner, Ph.D., Columbia University, Professor Emeritus (18th-century literature, criticism and theory, detective fiction)

Alan Stephens, Ph.D., University of Missouri, Professor Emeritus

Homer Swander, Ph.D., University of Michigan, Professor Emeritus

Affiliated Faculty

Susan Derwin, Ph.D. (Germanic, Slavic, and Semitic Studies)

Constance Penley, Ph.D. (Film Studies)

Chéla Sandoval, Ph.D. (Chicano Studies)

What does it mean to study English today? The English department engages that question by offering its students the opportunity to explore literary texts written in Old English, Internet texts, American novels, Anglo-Irish literature, queer textuality, science fiction, literature of the body, modern poetry, Shakespeare, etc.—all kinds of "literatures" written in English. We study the complex interactions between literature, culture, and history. At the heart of literary study lies the simple yet striking recognition that language constitutes both a technology of thought and a constituent of human reality. The major in English transforms this recognition into a program of study that develops the critical skills required to negotiate complicated literary and cultural texts. Together, we spend time working on questions like these: (1) How do historical and cultural contexts lend written texts their intelligibility and convey their strange power? (2) How do gender and minority discourses inform our understanding of literature? (3) How does the study of English engage the public sphere in its intersection with other fields, such as cognitive science, social science, and information science?

What can one "do" with a degree in English? Graduate and professional schools and employers seek people who can read, write, speak, and analyze—the basic skills acquired by our English majors. Students who study English learn how to think, and to think independently. They are trained to read a variety of literary and cultural works from across centuries and continents and to write proficient and lively arguments. English majors learn about how the past informs the present, become "keepers" of past works and present cultures, and leave college thinking and feeling more deeply about life and how to live it.

Current and prospective English majors are urged to consult the departmental undergraduate advisor for assistance in preparing programs of study. Students may also consult faculty advisors about academic and career aspects of their studies. Students should ask for a copy of the *English Department Undergraduate Handbook*. All students enrolling in English courses are encouraged to purchase a copy of the booklet *Success in English Courses*, available at the UCSB Bookstore.

English majors are encouraged to explore the opportunities for study abroad provided by the University of California's Education Abroad Program. Students may fulfill both major requirements and electives at exchanges with universities in the United Kingdom and Ireland and in Australia and New Zealand. At most European universities and in Israel students may fulfill elective requirements while taking courses in a foreign language. Because all courses taken through EAP are accepted as UC courses, students may spend a year of study in a foreign university with no loss of time in completing their degrees. The departmental advisor for the Education Abroad Program can assist in the choice of programs and courses that will best meet the goals of the major.

The Writing Program offers required and elective courses at freshman and advanced levels. Specifically, Writing 1, 2, 50, and 109AA-ZZ are offered through the Writing Program. See the Writing Program listing in this catalog for information about these courses.

Students with a bachelor's degree in English who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

SCWriP is a staff development program designed to improve the teaching of composition in all disciplines and grades, from elementary school through college. It conducts the Summer Institute in Composition at UCSB and year-round workshops on campus and at neighboring schools and colleges. SCWriP is an affiliate of the Bay Area Writing Project, the California Writing Project, and the National Writing Project.

Undergraduate Program

Bachelor of Arts—English

Requires 52 units in English, at least 44 of which must be upper-division units.

Preparation for the major. Required, with a grade-point average of 2.0 or higher: English 15.

An additional 4 units of lower-division English electives, exclusive of English 10, may be used for the major.

Foreign language requirement. Students must complete either Option 1 or Option 2 below. Option 1 is recommended. Election to Phi Beta Kappa requires Option 1. Students who contemplate graduate study should consult their prospective graduate schools to determine if specific languages are required.

Option 1: Completion of the fifth quarter or its equivalent in any foreign language currently taught at UCSB.

Option 2: Complete A and B, as follows: (A) Quarter three or equivalent of any foreign language currently taught at UCSB. (B) Three upper-division foreign language literature in translation courses (see department advisor for list of options).

Upper-division major. At least 44 units, including 20 units in the following courses: English 101, 102, 103A or 103B, 104A or 104B and 197. At least 24 additional units must be chosen from upper-division courses in English.

The English department offers students the opportunity to specialize in one of a series of areas. A sheet describing areas of specialization is available in the English department

Consult the department's quarterly *Course Outline Booklet* for the content of any particular English course.

Special Opportunities, Programs, and Awards

The honors program in English provides the opportunity for qualified majors to pursue advanced literary research and writing. To qualify for the program, students must maintain a grade-point average of 3.5 (overall and/or in the major) and have completed at least two quarters of the junior year at UCSB. After consulting with their department advisors, they may then apply to a professor of their choice with whom they will work for two quarters of their senior year on the writing of a thesis (or equivalent in creative composition), successful completion of which will merit the award of Distinction in the Major at graduation.

Students are also encouraged to apply for admission to the College of Letters and Science Honors Program as early as possible in their college careers.

Further information about the honors program is available from the department's honors program advisor and from the academic program advisor.

Supplemental Seminars. Students may take advantage of special seminar courses that are offered in conjuction with large lecture courses. These seminars provide an opportunity for motivated students to work closely with faculty members while enriching their large lecture experience.

Research Assistant Program. By application, qualified upper-division students may gain experience in academic research, while earning academic credit, as research assistants to the English faculty.

Awards. The William Frost Award is given annually to a senior or upper-division English major and carries a substantial stipend. Entrants are judged on their academic records, as well as on a critical essay which represents the student's best work. The Kieth E. Vineyard Honorary Scholarship is awarded annually to an undergraduate in recognition of outstanding skills in creative writing. Entry dates are announced during the winter quarter.

In recent years the department has sponsored several awards and contests, some which recognize excellence in creative writing, both poetry and fiction, and others which honor academic excellence in combination with financial need.

English Club. The English Club, a student-organized group, arranges programs of interest for all English undergraduates throughout the academic year. Their quarterly mailings inform students of upcoming club events as well as other items of interest and importance for English majors.

Minor—English

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in English and those offered by other departments and applied to the minor.

Preparation for the minor. Four lower-division units in English. May include English 10 but not courses in English composition.

Upper-division minor. Twenty units, distributed as follows:

A. Four units of literature pre-1700, selected from the following courses: English 101, 105A-B-C, 105S, 115, 119, 144, 145, 152A, 152B, 153, 157, 160, 162.

B. Four units of literature from the 1700s to the 1900s, selected from the following courses: English 102, 103A, 103B, 126A, 126B, 126C, 136A, 136B, 137A, 138A, 138B, 168, 169, 172, 177, 178, 179, 180, 181.

C. Twelve units of English electives.

Depending on course content, the following courses may apply to Area A or Area B of the upper-division minor: English 114AA-ZZ, 128AA-ZZ, 131, 132AA-ZZ, 133AA-ZZ, 134AA-ZZ, 151AA-ZZ, 165AA-ZZ. Any of these courses apply automatically to Area C. Contact the department to see which courses will apply to Areas A and B in a given quarter.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

The Department of English offers two closely related graduate programs: an M.A./Ph.D. program for students who have completed the B.A., and a Ph.D. program for those who come to UCSB with an M.A. from another institution. Both programs include extensive coursework in English and American literature, two qualifying examinations (the first of which also serves as the M.A. examination), and a doctoral dissertation. The M.A./Ph.D. is normally a five-year program. The Ph.D. program for students who enter with an M.A. is designed as a four-year program. Fellowship support is available for particularly strong candidates in their first and/or last years of graduate study. Additional support comes from teaching assistantships. Most students become teaching assistants by their second year in the program, if not earlier. Teaching assistants serve as section leaders in advanced literature courses and as instructors in freshman composition. In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

Students entering either the M.A./Ph.D. or the Ph.D. program should be aware that they are undertaking not only to deepen their enjoyment and understanding of major literary texts, modes, and movements, but also to explore their potential as interpreters, scholars, and in most cases, teachers of literature and language. They are embarking on a systematic course of study designed to ensure an understanding of literary history and its major achievements and to make them fully participating members of a professional community of scholars.

Admission

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Students admitted to the M.A./Ph.D. program will normally have completed an undergraduate major in English or have done extensive undergraduate work in English. For admission to the Ph.D. program applicants must have completed an M.A. in English or a closely related field. Admission to both programs is based on five criteria: (1) transcripts, (2) letters of recommendation, (3) scores on the Graduate Record Examination (GRE) general test and subject test in English literature, (4) a writing sample, and (5) a statement of purpose. The writing sample should normally be a substantial paper written in an upper-division or graduate English literature course.

Awards

Among other awards offered by the department, the Yvonne Gartrell Memorial Scholarship is awarded on an annual basis to a deserving incoming graduate student. The Outstanding Teaching Assistant in English Award is given to three English graduate teaching assistants.

Master of Arts—English

Degree Requirements

Requirements for the M.A. include the successful completion of (1) 36 units of graduate coursework; (2) an examination in one foreign language; (3) a comprehensive first qualifying examination. Only those students who complete their graduate coursework and the first qualifying examination with sufficient distinction will be invited to continue working toward the Ph.D.

Doctor of Philosophy—English

Degree Requirements

Requirements for the Ph.D. include (1) 12 units of graduate coursework beyond the M.A. (from UCSB), or 24 units of graduate coursework for students entering with the M.A. from another

institution; (2) fulfillment of language option A (two languages at the level of basic competency), or B (one language at the level of special competency); (3) a second qualifying examination, which is oral, covering three areas of concentration, one of which is the intended dissertation field; and (4) the dissertation. Students entering the Ph.D. program directly with an M.A. from another institution must also take the first qualifying examination no later than their fourth quarter of residence.

Additional information concerning both the M.A./Ph.D. program and the Ph.D. program can be found in the English Department's graduate brochure and handbook, and on the web site at www.english.ucsb.edu.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

English Courses

Detailed descriptions of English courses for the next quarter may be found in the Course Outline Booklet available in the department office prior to registration.

LOWER DIVISION

10. Introduction to Literary Study
(4) STAFF

Recommended as an alternative to Writing 50 for students planning to major in English or literary study.

Acquaints students with purposes and tools of literary interpretation. Introduces techniques and vocabulary of analytic discussion, introduces students to critical writing. Emphasis will be on poetry with some attention to drama, essay and the novel.

10S. Seminar for Introduction to Literature
(1) STAFF

Prerequisites: consent of instructor; concurrent enrollment in English 10.

A seminar course for a select number of students enrolled in English 10 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 10 reading list, as well as supplemental writing.

15. Introduction to Shakespeare
(4) STAFF

Introduction to Shakespeare in which a number of major plays are read with close attention to language, dramatic structure and historical context.

21. Introduction to Narrative
(4) STAFF

Prerequisite: Writing 2 or 50 or 109AA-ZZ or English 10.

An introduction to the study of narrative forms with a focus on the nature of narrative, the functions of narrative, and the transformations that occur when a narrative is moved from one medium or cultural context to another.

25. Introduction to Literature and the Culture of Information
(4) STAFF

Prerequisite: Writing 2 or 50 or 109AA-ZZ or English 10.

Introduction to the age of information in its relation to history, society, and the arts. Topics include the history of information, hypertext, virtual reality, cyberspace, and the role of literature and literacy in the digital age. Introduction of practical skills and technologies associated with the digital age.

97. Lower-Division Seminar
(4) STAFF

Prerequisite: Lower-division standing.

A seminar for lower-division students with a strong interest in literature. See departmental *Course Outline Booklet* for topics. Content will vary with each instructor. Students will be asked to do a project that acquaints them with some of the resources of the library and results in their reading beyond the primary course materials.

UPPER DIVISION

101. English Literature from the Medieval Period to 1650
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to English literature from the medieval period to 1650. The organizing thread of this course, and the selection of texts to be studied, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

101S. Seminar on English Literature from the Medieval Period to 1650
(1) STAFF

Prerequisites: concurrent enrollment in English 101; consent of instructor.

A seminar for a select number of students enrolled in English 101 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 101 reading list, as well as supplemental writing.

102. English and American Literature from 1650 to 1789
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to English and American literature from 1650 to 1789. The organizing thread of this course, and the selection of texts to be studies, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

102S. Seminar on English and American Literature from 1650 to 1789
(1) STAFF

Prerequisites: concurrent enrollment in English 102; consent of instructor.

A seminar for a select number of students enrolled in English 102 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 102 reading list, as well as supplemental writing.

103A. American Literature from 1789 to 1900
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to American literature from 1789 to 1900. The organizing thread of this course, and the selection of texts to be studies, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

103AS. Seminar on American Literature from 1789 to 1900
(1) STAFF

Prerequisites: concurrent enrollment in English 103; consent of instructor.

A seminar for a select number of students enrolled in English 103A designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 103A reading list, as well as supplemental writing.

103B. British Literature from 1789 to 1900
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to British literature from 1789 to 1900. The organizing thread of this course, and the selection of texts to be studies, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

103BS. Seminar on British Literature from 1789 to 1900
(1) STAFF

Prerequisites: concurrent enrollment in English 103; consent of instructor.

A seminar for a select number of students enrolled in English 103B designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 103B reading list, as well as supplemental writing.

104A. American Literature from 1900 to Present
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to American literature from 1900 to the present. The organizing thread of this course, and the selection of texts to be studies, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

104AS. Seminar on American Literature from 1900 to Present
(1) STAFF

Prerequisites: concurrent enrollment in English 104; consent of instructor.

A seminar for a select number of students enrolled in English 104A designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 104A reading list, as well as supplemental writing.

104B. British Literature from 1900 to Present
(4) STAFF

Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to British literature from 1900 to the present. The organizing thread of this course, and the selection of texts to be studies, will vary from quarter to quarter. Consult the department's *Course Description Booklet* to see what will be taught in any particular quarter.

104BS. Seminar on British Literature from 1900 to Present
(1) STAFF

Prerequisites: concurrent enrollment in English 104B; consent of instructor.

A seminar for a select number of students enrolled in English 104B designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 104B reading list, as well as supplemental writing.

10SA. Shakespeare, Poems and Earlier Plays
(4) STAFF
Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Major poems and plays of Shakespeare, 1593-1602, including such works as the Sonnets, *Hamlet, A Midsummer Night's Dream, Henry the Fourth, Twelfth Night.*

10SB. Shakespeare, Later Plays
(4) STAFF
Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Major works of Shakespeare from 1603-1613, including such plays as *King Lear, Macbeth, Antony and Cleopatra, Othello, The Tempest.*

10SC. Shakespeare Advanced Studies
(4) STAFF
Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Advanced study of Shakespearean topics.

10SS. Shakespeare: Selected Poems and Plays
(4) STAFF
Prerequisite: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Selected poems and plays, 1593-1613.

105SS. Seminar on Shakespeare
(1) STAFF
Prerequisites: concurrent enrollment in English 105S; consent of instructor.

A seminar for a select number of students enrolled in English 105S designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of English 105S reading list, as well as supplemental writing.

106. Creative Writing
(4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 8 units.

Writing in such forms as the short story, poetry, and fiction.

107. Writing of Fiction
(4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units.

Workshop and practice in fiction writing.

107S. Seminar in Fiction Writing
(4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units but only 8 units may be applied to the major.

Advanced seminar in fiction writing.

109. Writing of Verse
(4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units.

Workshop and practice in verse writing.

109S. Seminar in Verse Writing
(4) STAFF
Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units but only 8 units may be applied to the major.

Advanced seminar in verse writing.

110A. Old English
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Introduction to language, prose, and shorter poems of seventh to tenth century Anglo-Saxons. Computerized exercises for grammar and syntax. Readings include *The Dream of the Rood* and *The Wanderer*, as well as riddles and selections from the *Chronicles*.

110B. Old English
(4) STAFF
Prerequisite: English 110A.

Reading and translation of *Beowulf*. Analysis of meter and style; study of the manuscript; and discussion of critical issues.

111. The History of the English Language
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

English in its old, middle, and modern forms. Such introductory topics as language families and change; etymology, semantics; grammars, syntax; oral, written; groundwork for such methods of literary analysis as stylistics.

112. Practical Criticism
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A combined writing and criticism course for students of literature.

113AA-ZZ. Studies in Literary Theory and Criticism
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 12 units providing letter designations are different.

Exploration in traditions and innovations of critical theory, literary interpretation, and philosophy. Topics vary from quarter to quarter, but will focus on the major critical figures or movements (from Aristotle to the present) that have shaped our notion of "literature."

114AA-ZZ. Women and Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit providing the letter designations are different, but only 8 units may be applied toward the major.

The courses offered will include at different times such subjects as feminist theory, women writers, and women in literature.

115. Medieval Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

English and Continental literature through the fifteenth century, exclusive of the *Canterbury Tales* but including such works as *Beowulf, Morte d'Arthur, Sir Gawain and the Green Knight*, and selected romances and lyrics.

116A. Biblical Literature: The Old Testament
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A literary approach to the Hebrew scriptures and the Apocrypha.

116AS. Seminar for Biblical Literature: The Old Testament
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 116A; consent of instructor.

A seminar course for a select number of students enrolled in English 116A designed to enrich the large lecture experience for the motivated student. Course includes either supplementary readings, or more intensive study of the English 116A reading list, as well as supplementary writing.

116B. Biblical Literature: The New Testament
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Recommended preparation: English 116A.

A literary approach to the New Testament.

116BS. Seminar for Biblical Literature: The New Testament
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 116B; consent of instructor.

A seminar course for a select number of students enrolled in English 116B designed to enrich the large lecture experience for the motivated student. Course includes either supplementary readings, or more intensive study of the English 116B reading list, as well as supplementary writing.

116C. Biblical Literature: An Introduction
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Not open to students who have completed English 116A or 116B.

Literary approaches to the Hebrew Scriptures and the New Testament.

116CS. Seminar–Biblical Literature: An Introduction
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 116C; consent of instructor.

A seminar course for a select number of students enrolled in English 116C designed to enrich the large lecture experience for the motivated student. Course includes either supplementary readings, or more intensive study of the English 116C reading list, as well as supplementary writing.

119. Studies in Medieval Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet.*

120. Modern Drama
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

European and American drama from Ibsen to the present.

121. The Art of Narrative
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An exploration of traditions and functions of storytelling; may include a range of forms from the anecdote to the novel.

121S. Seminar on the Art of the Narrative
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 121; consent of instructor.

A seminar course for a select number of students enrolled in English 121 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 121 reading list.

122AA-ZZ. Cultural Representations
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A study of literary works, paintings, films, and other representational forms as they influence cultural attitudes. The courses offered will focus on such topics as the body, the city, the everyday, the marketplace, and the machine.

122NE. Cultural Representations: Nature and the Environment
(4) BAZERMAN
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Same course as Environmental Studies 122NE.

Perceptions of nature have changed throughout the history and vary across cultures. Course explores changing expressions of our changing relations to the world we live in, with emphasis on cultural

movements (films, literature, newspapers, etc.) that have affected contemporary American experience.

122S. Seminar on Cultural Representations
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 122AA-ZZ; consent of instructor.

A seminar course for a select number of students enrolled in English 122AA-ZZ designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 122AA-ZZ reading list, as well as supplemental writings.

123. The Novel in English
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A survey of British and American fiction from the late eighteeth century to the present.

123S. Seminar on the Novel in English
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 123; consent of instructor.

A seminar course for a select number of students enrolled in English 123 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 123 reading list, as well as supplemental writing.

124. Readings in the Modern Short Story
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Consult the *Course Outline Booklet* in the department office for the authors read in any particular quarter.

124S. Seminar on the Short Story
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 124; consent of instructor.

A seminar course for a select number of students enrolled in English 124 designed to enrich the large lecture experience for the mtoivated student. Course will include either supplementary readings, or more intensive study of the English 124 reading list, as well as supplemental writing.

12S. The History of Written Culture
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An examination of the history of writing and its impact on society, considering the ways in which writing has allowed the reorganization of government, law, consciousness, knowledge, commerce, personal relations, culture, and the implications of the electronic revolution.

126A. Survey of British Fiction (I)
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The eighteenth century. Such writers as Defoe, Richardson, Fielding, Smollett, and Sterne.

126B. Survey of British Fiction (II)
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The nineteenth century to 1850. Such writers as Austen, the Brontes, Thackeray, and Dickens (earlier novels).

126C. Survey of British Fiction (III)
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The nineteenth century from 1850. Such writers as Dickens (later novels), Eliot, Trollope, and Hardy.

126D. Survey of British Fiction (IV)
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The twentieth century. Such writers as Conrad, Joyce, Lawrence, Forster, Virginia Woolf, and Huxley.

127. Rhetoric: History and Theory
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An introduction to rhetorical theory with attention to the historical development of rhetoric from the classical period to the current day. The course will be organized around concepts from rhetorical theory and their applications, presented through primary and secondary texts.

128AA-ZZ. Literary Genres
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 12 units providing letter designations are different, but only 8 units may be applied toward the major.

Detailed readings in, and critical examinations of, specific literary forms. Recently taught genres have included autobiography, comedy, romance, satire.

129. Queer Textuality
(4) STAFF
Prerequisites: Writing 2 and 50.

Investigation of the interrelations between writing and queer sexualities, i.e. those sexualities (gay, lesbian, transsexual, transgender, etc.) which represent an averse or contestatory relation to normative heterosexuality. Specific topics will vary by quarter.

131. Studies in American Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated with consent of department chair to a maximum of 8 units if course content varies.

Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the department's *Course Outline Booklet*.

132AA-ZZ. Studies in American Writers
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 8 units provided the letter designations are different.

Courses in individual American writers such as Hawthorne-Melville (132HM); Henry James (132J); Mark Twain (132T); Ernest Hemingway (132H); William Faulkner (132F); Emily Dickinson (132 D); Robert Frost (132FR); Walt Whitman (132W).

133AA-ZZ. Studies in American Regional Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 8 units provided the letter designations are different.

Courses on American writing associated with particular regions such as the South, the West, New England.

134AA-ZZ. Studies in the Literature of Cultural and Ethnic Communities in the United States
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 12 units provided the letter designations are different, but only 8 units may be applied toward the major.

Courses on writing produced by, or associated with, cultural communities in America such as Afro-American, Chicano, Asian-American.

135. The Puritan Tradition in American Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The development of the main ideas of American Puritanism.

136. Seventeenth-Century and Eighteenth-Century American Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Course surveying the variety of developing traditions in American writing from the beginnings through the revolutionary period.

137A. Poetry in America before 1900
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Developing traditions of American poetry within a variety of historical and cultural contexts from the beginnings to the modern era.

137B. Poetry in America since 1900
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Developing traditions of American poetry within a variety of historical and cultural contexts—modern to contemporary.

138A. Prose Narrative in America before 1865
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Developing traditions of prose narrative within a variety of historical and cultural contexts from the beginnings through the Civil War.

138B. Prose Narrative in America, 1865 to 1917
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Developing traditions of prose narrative within a variety of historical and cultural contexts from the Civil War to World War I.

138C. Prose Narrative in America since 1917
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Developing traditions of prose narrative within a variety of historical and cultural contexts from World War I to the present.

140. Contemporary American Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

An intensive study of American writing from World War II to the present.

144. The European Renaissance
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Such authors as Petrarch, Boccaccio, Rabelais, Montaigne, Erasmus, More, and Machiavelli.

145. Studies in English Renaissance Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated with consent of department chair to a maximum of 8 units if course content varies.

Studies in English literature of the period from 1500 to 1660. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet.*

150. Anglo-Irish Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A study of twentieth century Irish literature written in English against a background of Irish history during the struggle for independence and later. Major emphasis on Yeats, Joyce, Synge, and O'Casey; other writers of the period, such as Stephens, O'Flaherty, O'Connor, and Behan, will also be touched on.

151AA-ZZ. Studies in British Writers
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 8 units provided the letter designations are different.

Courses in individual writers such as Spenser, Donne, Jonson, Dryden, Pope, Swift, Richardson, Fielding, Johnson, Blake, Wordsworth, Dickens, Lawrence, and Yeats.

152A. Chaucer: Canterbury Tales
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Intensive study of the Canterbury Tales.

152AS. Seminar on Chaucer: The Canterbury Tales
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 152A; consent of instructor.

A seminar course for a select number of students enrolled in English 152A designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 152A reading list, as well as supplemental writing.

152B. Chaucer: Troilus and Criseyde and the Minor Poems
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Study of *Troilus* and *Criseyde* and other works of Chaucer.

154. British and American Verse Since 1900
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 12 units with consent of the department chair and provided the topics are different.

A course in British and American verse since 1900.

156. Literature of Chivalry
(4) STAFF
Prerequisite: Writing 2 or 50 or 109 or English 10.

Study of texts related to the social and cultural practices of chivalry in the Middle Ages, from the seventh through the fifteenth centuries. Centers on such texts as *The Battle of Maldom, The Dream of the Rood, Sir Orfeo, Gawain and the Green Knight, Le Morte Darthur,* and the Middle English Lyrics.

157. English Renaissance Drama
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A course in the English drama of the period from 1500 to 1642, excluding Shakespeare. Such writers as Marlowe, Jonson, Dekker, Heywood, and Webster.

160. Spenser
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

The works of Spenser, with primary focus on *The Faerie Queene.*

162. Milton
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Intensive study of Milton.

162S. Seminar on Milton
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 162; consent of instructor.

A seminar course for a select number of students enrolled in English 162 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 162 reading list, as well as supplemental writing.

165AA-ZZ. Topics in Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit provided the letter designations are different, but only 8 units may be applied toward the major.

Studies of topics not limited to a specific author, period, or literary form. Specific course titles will be announced prior to the beginning of each quarter.

168. Restoration and Eighteenth Century Verse and Prose
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Non-dramatic works by such writers as Dryden, Pope, Swift, Cowper, Gray, Johnson, and Boswell.

169. Restoration and Eighteenth Century Drama
(4) STAFF
Prerequisites: Writing 2 and 50.

Such dramatists as Dryden, Etherege, Wycherley, Congreve, and Sheridan.

172. Studies in the Enlightenment
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated with consent of department chair to a maximum of 8 units if course content varies.

A course in the neoclassical literature of England and the Continent. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet.*

177. The Age of Romanticism
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

English and Continental literature of the romantic movement.

178. Nineteenth Century Prose
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Nonfiction prose writers of the romantic and Victorian periods, such as Coleridge, Hazlitt, Arnold, and Carlyle.

179. British Romantic Writers
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Such writers as Blake, Wordsworth, Coleridge, Byron, Keats, Shelley, Lamb, and Hazlitt.

180. The Victorian Era
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Such writers as Browning, Tennyson, Hopkins, Hardy, and the pre-Raphaelites.

181. Studies in the Nineteenth Century
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated with consent of department chair to a maximum of 8 units if course content varies.

A course in the romantic and Victorian periods. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet.*

182AA-ZZ. Craft of Prose
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit up to a maximum of 12 units providing letter designations are different.

Reading of selected fiction and other relevant prose emphasizing analysis and understanding of literary methods, kinds, techniques, and objectives from the viewpoint of the practicing writer.

183AA-ZZ. Craft of Verse
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 12 units providing letter designations are different.

Reading of selected poems and critical statements by the authors emphasizing analysis and understanding of literary methods, kinds, techniques, and objectives from the viewpoint of the practicing writer.

184. Modern European Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Helps to fulfill the English major requirement in foreign language (Option 2). Such authors as Dostoyevsky, Tolstoy, Proust, Kafka, Mann, and Sartre in translation.

185. Modernism in English
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A survey of English Modernism. Reading may include works by immediate precursors of English Modernism (Pater, Wilde), but will concentrate on representative texts by such central figures as Eliot, Pound, HD, Williams, Yeats, Stein, Woolf, Conrad, and Barnes.

186. Modernism
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Introduction to Modernism as an international complex of interconnected aesthetic ideas and practices across the media.

187. Studies in Modern Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

May be repeated for credit to a maximum of 8 units with consent of department chair if course content varies.

Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet.*

188. Studies in Postmodernism
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

A course devoted to both the texts and problematics of postmodernism.

189. Contemporary Literature
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Study of English and American contemporary drama, fiction, and poetry written since 1960.

190. Literature in English Outside England and the United States
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Literature in English from such countries as India, the Caribbean, and the African nations.

191. Afro-American Fiction and Criticism, 1920s to the Present
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Such early writers as Hughes, Hurston, Wright, Ellison, Baldwin, and such contemporary writers as Reed, Walker, Morrison, Bambara within various cultural and theoretical contexts.

192. Science Fiction
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Suitable for majors as well as non-majors.

The course examines science fiction as a literary genre. Emphasis throughout is upon the nature and

development of the genre in its historical and cultural context.

192S. Seminar on Science Fiction
(1) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; concurrent enrollment in English 192; consent of instructor.

A seminar course for a select number of students enrolled in English 192 designed to enrich the large lecture experience for the motivated student. Course will include either supplementary readings, or more intensive study of the English 192 reading list, as well as supplemental writing.

193. Detective Fiction
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Critical and historical study of fiction from the classics of Poe, Conan Doyle, and Christie to the many contemporary kinds.

196. Honors English
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing; consent of department.

For students in the English Department's honors program only.

197. Upper-Division Seminar
(4) STAFF
Prerequisites: Writing 2 or 50 or 109 or English 10 or upper-division standing.

Content will vary with each instructor. Students will be asked to do a project that acquaints them with some of the resources of the library and results in their reading beyond the primary course materials.

199. Independent Studies in English
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in English; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding 3 quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 8 units of 199/199RA course work toward the English major.

Reading and conference for students with upper-division standing.

199RA. Independent Research Assistance in English
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in English; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding 3 quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 8 units of 199/199RA course work toward the English major.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

200AA-ZZ. Methods of Literary Study
(4) STAFF
Prerequisite: graduate standing.

Providing that letter designations are different, the course may be repeated for credit with the consent of the graduate advisor.

Course on literary theory and critical methods required for all graduate students in the department. Specific authors and topics vary from class to class.

20SA. Old English
(4) STAFF
Prerequisite: graduate standing.

Introduction to the language, prose, and shorter poems.

20SB. Old English
(4) STAFF
Prerequisites: English 205A; graduate standing.

Beowulf.

205C. Old English
(4) STAFF
Prerequisites: 205A-B; graduate standing.

May be repeated for credit with consent of the chair of the department graduate committee.

Topics in Old English literature.

206. The History of the English Language
(4) STAFF
Prerequisite: graduate standing.

Contents of "studies" courses listed below will vary from quarter to quarter, therefore, these may be repeated for credit with the consent of the chair of the department graduate committee.

230. Studies in Medieval Literature
(4) STAFF

231. Studies in Renaissance Literature
(4) STAFF

232. Studies in Restoration and Eighteenth Century Literature
(4) STAFF

233. Studies in Nineteenth Century Literature
(4) STAFF

234. Studies in Twentieth Century Literature
(4) STAFF

235. Studies in American Literature
(4) STAFF

236. Studies in Literary Criticism and Theory
(4) STAFF

237. Studies in Genres, Themes, Approaches
(4) STAFF

238. Scholarly Editing
(4) STAFF

An introduction to the theory and practice of modern scholarly editing, using examples drawn from both literary and historical documents.

26SAA-ZZ. Seminar in Special Topics
(4-4) STAFF
Prerequisite: graduate standing.

Providing that the letter designations are different, the course may be repeated for credit with the consent of the graduate advisor.

Content of two-quarter course will vary from year to year.

270. Studies in Poetry
(4) STAFF

271. Studies in Drama
(4) STAFF

272. Studies in Fiction
(4) STAFF

297. Graduate Studies
(4) STAFF
Prerequisite: graduate standing.

Maximum of 4 units will count towards M.A. degree with consent of the graduate advisor. No unit credit allowed toward Ph.D. degree.

Graduate tutorial involving regular conferences with instructor and directed research toward seminar paper(s). Attendance at relevant upper-division lectures also required.

S00. Directed Teaching
(4) STAFF
Prerequisite: appointment as a teaching assistant.

No unit credit allowed toward advanced degrees.

Supervision and instruction of teaching assistants. Teaching assistants must register for this course.

590. Workshop on Scholarly Publication
(2-4) STAFF
Prerequisite: graduate standing.

Workshop to help graduate students prepare papers for submission to scholarly journals.

591. Doctoral Colloquium
(1) STAFF
Prerequisite: graduate standing.

Course provides support for graduate students when developing their dissertation ideas. Focus on research in the humanities at a practical level.

S92. Transcriptions Colloquium
(1) STAFF
Prerequisite: graduate standing.

Provides graduate students: a) introduction to the hardware and software used in advance webpage design; b) an overview of the intellectual issues of "digital culture;" c) a context for developing a web-authoring project.

S96AA-ZZ. Directed Reading and Research
(1-4) STAFF
Prerequisite: graduate standing.

Individual tutorial. A written proposal for each tutorial must be approved by the graduate advisor.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF

Maximum of 12 units per quarter. S/U grade. Enrollment limited to 24 units per examination. No unit credit allowed toward advanced degree(s).

Instructor should be the student's major professor or the chair of the doctoral committee.

S99. Dissertation Research and Preparation
(1-12) STAFF

Only for research underlying the dissertation, writing the dissertation.

Related Courses in Other Departments

Education: see SE 394, SE 396
Linguistics: see 160

English as a Second Language

English as a Second Language Program,
South Hall 3507;
Telephone (805) 893-7258
E-mail: mlee@humanitas.ucsb.edu
Web site: www.linguistics.ucsb.edu/esl
Director: Jan Frodesen

Faculty

Jan M. Frodesen, Ph.D., UC Los Angeles, Lecturer

Roberta L. Gilman, M.A., UC Santa Barbara, Lecturer

Janet L. Kayfetz, Ph.D., Florida State University, Lecturer

Writing Program/ESL Advisory Committee

Dorothy M. Chun, Ph.D. (Germanic, Slavic, and Semetic Studies)

Richard P. Duran, Ph.D. (Graduate School of Education)

Jan Frodesen (ex officio), Ph.D., Director (English as a Second Language)

Judith Kirscht (ex officio), M.A., (English as a Second Language)

Stephen I. Long, Ph.D. (Electrical and Computer Engineering)

Russel Rum berger, Ph.D. (Graduate School of Education)

Arthur Schwartz, Ph.D. (Linguistics)

The English as a Second Language (ESL) Program offers courses for undergraduate and graduate students for whom English is not the first language. The primary goal of the ESL program is to prepare students for participation in an American academic community. All incoming graduate students whose first language is not English are required to take the written and oral English Language Placement Examination (ELPE). Placement in ESL courses is based on students' performance on these examinations. In addition, all prospective teaching assistants are required to take the TA Language Evaluation in order to be certified for sole classroom teaching responsibility.

New undergraduates whose first language is not English may be required to enroll in ESL courses as determined by their performance on the written ELPE or Subject A Placement Examination. Students placed in these ESL courses must successfully complete them before they can enroll in the required freshman writing sequence.

See the Department of Linguistics entry in this catalog for a listing of courses. Contact the ESL program or visit our web site: www.linguistics.ucsb.edu/esl for course descriptions, schedule of classes, examination dates, and further information.

Environmental Studies

Environmental Studies Program,
Division of Mathematical, Life, and Physical Sciences,
Girvetz 2320;
Telephone (805) 893-2968
Fax (805) 893-8686
E-mail: ENVST_info@envst.ucsb.edu
Web site: ucsbuxa.ucsb.edu/es
Program Chair: Jo-Ann Shelton

Faculty

Robert Almy, M.S., Western Washington University, Lecturer (environmental impact analysis)

Oliver A. Chadwick, Ph.D., University of Arizona, Professor (soil sciences, soil genesis and classification, advanced pedology, and soil/geomorphology). Joint appointment with the Department of Geography.

Jordan F. Clark, Ph.D., Columbia University, Assistant Professor (geochemistry, hydrologic sciences, and environmental geology). Joint appointment with the Department of Geological Sciences.

David A. Cleveland, Ph.D., University of Arizona, Associate Professor (diversity and sustainability in agricultural systems, human population and the environment). Joint appointment with the Department of Anthropology.

Steven D. Gaines, Ph.D., Oregon State University, Professor (marine community ecology; biostatistics). Joint appointment with the Department of Ecology, Evolution, and Marine Biology.

Anita Guerrini, Ph.D., Indiana University, Associate Professor (history of science, environment, and disease). Joint appointment with the Department of History.

Edward A. Keller, Ph.D., Purdue University, Professor (environmental and engineering geology, geomorphology). Joint appointment with the Department of Geological Sciences.

Charles D. Kolstad, Ph.D., Stanford University, Professor (environmental and resource-energy economics). Joint appointment with the Department of Economics.

Bridget A. Lewin, M.A., UC Santa Barbara, Lecturer (environmental education and instruction and the use of technology in education)

Melvyn S. Manalis, Ph.D., UC Santa Barbara, Lecturer with Security of Employment (renewable and solar energy)

J. Marc McGinnes, J.D., UC Berkeley, Lecturer with Security of Employment (environmental law, policy, and mediation)

Michael A. Osborne, Ph.D., University of Wisconsin, Associate Professor (history of biological sciences). Joint appointment with the Department of History.

Joshua P. Schimel, Ph.D., UC Berkeley, Associate Professor (terrestrial ecosystem ecology). Joint appointment with the Department of Ecology, Evolution, and Marine Biology.

Russell J. Schmitt, Ph.D., UC Los Angeles, Professor (marine-community ecology and population). Joint appointment with the Department of Ecology, Evolution, and Marine Biology.

Mark Schlenz, Ph.D., UC Santa Barbara, Lecturer (environmental literature and writing)

Jo-Ann Shelton, Ph.D., UC Berkeley, Professor (environmental ethics). Joint appointment with the Department of Classics.

Susan C. Stonich, Ph.D., University of Kentucky, Professor (ecological anthropology and Third World environmental problems). Joint appointment with the Department of Anthropology.

Paul Wack, M.P.A., University of Southern California, Lecturer (environmental planning)

Emeriti Faculty

Daniel B. Botkin, Ph.D., Rutgers University, Professor Emeritus (ecology)

David Brokensha, Ph.D., Oxford University, Professor Emeritus (cultural ecology, modernization)

Garrett Hardin, Ph.D., Stanford University, Professor Emeritus (human ecology)

Roderick F. Nash, Ph.D., University of Wisconsin, Professor Emeritus (environmental history)

Arent H. Schuyler, Jr., Ph.D., UC Los Angeles, Lecturer Emeritus (energy policy)

Affiliated Faculty

Robert T. Deacon, Ph.D. (Economics)

Hugo A. Loaiciga, Ph.D. (Geography)

James D. Proctor, Ph.D. (Geography)

Ines Talamantez, Ph.D. (Religious Studies)

(In addition to the listed faculty, community professionals not listed in the catalog teach courses in the Environmental Studies Program.)

The Environmental Studies Program at UCSB was established as an academic program more than 30 years ago. It is one of the first such programs in the country and with over 3,500 alumni remains one of the strongest in terms of student demand and national reputation. In 1995 the Environmental Studies Program played an important role in UCSB's ranking by *Science Watch Magazine* as the number one institution in the country in the field of environment and ecology.

Today, the Environmental Studies Program has approximately 550 students and employs 14 full-time ladder faculty, 12 affiliated or emeritus faculty, and six to eight outside professionals who as lecturers teach courses in their field of expertise. The Environmental Studies Program offers three undergraduate degrees, two of which encourage an interdisciplinary approach to environmental studies: (1) The bachelor of arts degree in environmental studies provides a breadth of social science, natural science, and humanities courses necessary to understand the many facets of our environment. (2) The bachelor of science degree in environmental

studies also emphasizes the importance of an interdisciplinary approach; however, it also provides a strong introduction to the role that the natural and physical sciences play in environmental problems. (3) The Environmental Studies Program is also home to one of the first academic programs on the West Coast to offer a bachelor of science degree in hydrologic sciences. This degree is specifically designed to study the significant role water plays in our environment.

Majoring in Environmental Studies

The environmental studies curriculum is designed to provide students with the scholarly background and intellectual skills necessary to understand complex environmental problems and formulate ecologically sound decisions. The curriculum is interdisciplinary, drawing upon not only environmental studies faculty, but also the resources of a variety of environmentally related departments and disciplines at UCSB as well as the local Santa Barbara community. Although the program offers two environmental degrees, both majors recognize and emphasize the interrelationships between the humanities, social sciences, and natural sciences.

The bachelor of arts degree in environmental studies addresses these interdisciplinary relationships by providing the flexibility necessary for students to explore the social, cultural, and scientific issues pertaining to the environment. For their major preparation students in the B.A. degree program enroll in a variety of introductory social science, humanities, and natural science courses. At the upper-division level, depending on their own area of interest, students may pursue either a specific or multidisciplinary environmental emphasis by choosing a combination of elective courses from within the Environmental Studies Program. The last part of the major is a 20-unit upper-division outside concentration where students complete courses from one or more UCSB departments or programs relating to their emphasis. Approximately one-third of all environmental studies B.A. majors elect to use this section to complete either a double major or minor, or to participate in a field studies or study abroad program.

The goal of the bachelor of science degree in environmental studies is to train a student who is proficient in the natural and physical sciences, yet is aware of social and cultural influences upon environmental problems facing society today. The B.S. degree follows a curriculum design similar to the B.A. degree in environmental studies. However, in addition to introductory social science courses, the bachelor of science preparation requires a full year of introductory biology, chemistry, physics, and calculus. The upper-division and outside concentration, while still interdisciplinary and flexible, limit the number of social science and humanities courses a student may take. The majority of environmental studies electives, as well as the outside concentration, are restricted to physical and natural science disciplines.

Upon completion of their undergraduate degree, over one half of all environmental studies graduates go on to conduct research or attend graduate school for further study of the environment. The range of programs attended varies widely depending on a student's choice of degree and emphasis, but students are often qualified to pursue disciplines such as public policy/administration, city or regional planning, Geographic Information Systems (GIS), environmental health, environmental engineering, waste management, environmental law, education, natural resource management, forestry, or physical, chemical and biological sciences.

The two degrees in environmental studies have also prepared graduates for positions in diverse occupations including environmental consulting and impact analysis, the National Park Service, the U.S. Forest Service, the Environmental Protection Agency, "green" business, toxicology, the U.S. Department of Energy, public-interest lobbying, water conservation, local and federal government, outdoor recreation, industrial hygiene, the Peace Corps, environmental education, mineral and resource management, and recycling and hazardous waste management. Employment opportunities are enhanced through a synthesis of coursework and faculty-supervised internships in a chosen career field.

In addition to the internship program, other student opportunities include the Environmental Studies Senior Honors Program, a senior thesis course (Environmental Studies 197), and the opportunity to conduct independent research or serve as a research assistant with an environmental studies faculty member (Environmental Studies 199 or 199RA). Specialized writing classes, designed to increase a student's ability to produce comprehensive papers, are linked to some departmental courses. The Environmental Studies Program is also strongly affiliated with study abroad programs and field research schools which provide students the opportunity to receive academic credit while conducting environmental research in places such as Nepal, Africa, Australia, South America, Hawaii, Alaska, and Montana. Students may also conduct independent research at any of the 30 California natural reserves managed by the UC Reserve system.

For more information about these and other opportunities, please contact the program's academic advisor at (805) 893-3185, stop by the Environmental Studies Program main office, or e-mail your inquiries to ENVST_info@envst.ucsb.edu.

The Environmental Studies Program welcomes transfer and continuing students.

Majoring in Hydrologic Sciences

Hydrology is a science dealing with the occurrence, circulation, distribution, and properties of the waters of the solid earth and its atmosphere. Many of the significant environmental problems that society is facing today are related to hydrologic or water issues. These include the hydrologic impact of climate change; the transportation of hazardous materials in both ground and surface water; the maintenance of high quality water for human consumption, industry, irrigation, recreation, energy generation, and agriculture; the understanding of geological hazards; and the management of important aquatic environments. Because water is important to and affected by physical, chemical, and biological principles, the curriculum of the B.S. degree in hydrologic sciences is multidisciplinary.

The main focus of the hydrologic sciences program and major is to provide students with the scientific training needed to understand and solve complex hydrologic problems at local, regional, and global levels. The goal of the hydrologic sciences curriculum is to provide a rigorous framework for students to examine the hydrologic process in our environment. Although the program is housed within the Environmental Studies Program, the curriculum for this degree is offered cooperatively by the departments of Ecology, Evolution, and Marine Biology; Chemistry; Geography; and Geological Sciences. Lower-division courses concentrate on the physical and natural sciences. In the upper-division, students complete a core group of hydrology courses and then select one of the following four science concentrations to complement their hydrology emphasis: biology, chemistry, geography, or geology.

Students who graduate with a B.S. degree in hydrologic sciences are prepared to do graduate work in such fields as environmental science, biology, ecology, chemistry, geography, geology, environmental engineering, and a variety of specialty programs in hydrology.

Hydrologic sciences students are also often qualified for positions in environmental consulting and planning, water quality analysis, aquatic resource management, waste water treatment, as well as a variety of jobs with state and federal agencies. Students who are interested in pursuing a career in the hydrologic sciences are encouraged to visit the environmental studies peer advisor's office for additional information pertaining to jobs and careers in the hydrology field.

Students in hydrologic sciences have the opportunity to conduct academic internships. Through the Environmental Studies Internship Program, a student majoring in hydrologic sciences can obtain valuable hands-on experience while earning academic credit towards major requirements. Students majoring in hydrologic sciences may also conduct independent research or serve as a research assistant with faculty members (Environmental Studies 199 or 199RA). In addition, the Environmental Studies Program offers a senior honors program for all qualified hydrologic sciences majors in which a student can receive a "Distinction in the Major" award upon successful completion of the program. The hydrologic sciences program is also affiliated with numerous study abroad programs and schools, which provide students the opportunity to receive academic credit while conducting hydrological research around the world.

The hydrologic sciences major welcomes transfer and continuing students.

Internship Program

Students majoring in either environmental studies or hydrologic sciences may choose to complete an internship from the Environmental Studies Internship Program (ESIP). Managed by the environmental studies internship coordina-

tor, this academic program was initiated in 1973 to provide students with experience in their field of interest and to tie classroom learning to practical field applications.

Internships are considered an integral part of the environmental studies and hydrologic sciences curriculum and are fully supported by the faculty. Each year, between 120 and 150 students are placed in internships locally, statewide, nationally, and internationally. Positions are available year round and the internship coordinator is available to assist students in selecting appropriate internships to meet their learning objectives. Academic credit (Environmental Studies 192) is awarded to junior and senior level students who successfully complete an internship position. An extensive internship database as well as general information regarding the Environmental Studies Internship Program is available on the Environmental Studies Program's webpage.

Field Studies, Study Abroad, and Research Opportunities

The Environmental Studies Program strongly encourages its students to participate in experiential elective courses, study abroad programs, or any other academic opportunities which enhance their environmental education. The environmental studies curriculum has a number of special courses which allow students to conduct independent research projects (Environmental Studies 199), work as a research assistant for one of its faculty members (Environmental Studies 199RA), or pursue a senior thesis on a topic of their choice (Environmental Studies 197).

Additionally, through the outside concentration requirement, environmental studies students may earn academic credit towards their major requirements while conducting field research in the outdoors with faculty from all over the globe. The Environmental Studies Program is proud to be affiliated with a number of field studies and research programs such as San Francisco State's *Wildlands Studies Program*, University of Montana's *Wild Rockies Field Institute*, UC Santa Cruz's *Sierra Institute*, and Boston College's *The School for Field Studies.*

Furthermore, the flexibility of the environmental studies curriculum permits students the opportunity to pursue study abroad programs through the UC Education Abroad Program. Past environmental studies majors have taken up to one full year to study at universities located in New Zealand, Ecuador, England, Scandinavia, and the University of Pittsburgh's *Semester at Sea.* Depending on the coursework taken, academic credit may be petitioned to substitute for a large number of units in the environmental studies or hydrologic sciences majors.

Approximately one-half to two-thirds of all environmental studies majors complete at least one field studies or study abroad program before graduating. Additional information about affiliated environmental field studies programs and study abroad programs is available from the environmental studies academic advisor.

Scholarships and Awards

Each year, undergraduate scholarships and awards are available to students majoring within the Environmental Studies Program. They include the UCSB Foundation's Pearl Chase Scholarship, which awards one or two $1,500 scholarships recognizing academic excellence within environmental studies. The Environmental Studies Associate's Tom Rogers Scholarship gives up to $5,000 a year to students who embody the ideals of civic responsibility and leadership. The Mathew Charles Decker Memorial Scholarship annually awards $500 to $700 a year to assist a student in participating in an environmental field studies program. And the Coeta Barker Scholarship awards at least two $500 scholarships to students who are in good academic standing and participate in an unpaid academic internship.

The Senior Honors Program

Qualified majors are eligible to participate in the Environmental Studies Senior Honors Program, which offers the opportunity to work closely with a faculty advisor to complete a senior thesis. Requirements include senior standing, completion of at least 20 upper-division major units, minimum grade-point average of 3.0, and enrollment in Environmental Studies 197. Students who successfully complete the program and obtain a minimum overall grade-point average set each spring, are eligible for graduation with "Distinction in the Environmental Studies Major."

It is highly recommended that lower-division students interested in participating in the senior honors program should enroll in the honors discussion sections offered with Environmental Studies 1, 2, and 3. Interested students may obtain additional information regarding the senior honors program from the environmental studies undergraduate advisor.

Undergraduate Program

Bachelor of Arts— Environmental Studies

The major is divided into three parts: preparation for the major, upper-division requirements within environmental studies, and outside concentration in related areas.

Preparation for the major. Required: Environmental Studies 1, 2, and 3; EEMB 20 or MCDB 20; Economics 1 or 2 or 109; one course from Geology 2, 20, 170, Geography 3A or 3B; Geography 13; Mathematics 34A-B or 3A-B; one course from PSTAT 5AA-ZZ or EEMB 30; Chemistry 1A-AL-1B-BL and either 1C-CL or Chemistry 101. Also required, two courses from Anthropology 2 or 5; Geography 5; Global Studies 1 or 2; History 7; Political Science 6 or 7 or 12; Sociology 1. Finally, one course from the following list: Philosophy 3 or 4, Political Science 1, Religious Studies 8.

Upper-division requirements within environmental studies. All environmental studies majors pursuing a bachelor of arts degree must complete 13 required units and 28 elective units for a total of 41 units within environmental studies. Required upper-division units are: Environmental Studies 100, 115, and 190; one course from Environmental Studies 106, 187, or 188 (or Geography 187 or 188). The 28 units of elective courses should be selected in consultation with the undergraduate advisor to constitute a plan of study in a variety of areas such as, but not limited to: environmental planning, natural resource management, environmental law, energy, and Third World studies. No more than 4 units each from Environmental Studies 192, 194, 199, and 199RA will apply, and no more than 8 units of these courses combined will be accepted toward the major.

Outside concentration. Environmental studies majors must complete an outside concentration consisting either of 20 upper-division units of classes taken in another department or undergraduate program within the College of Letters and Science, except physical activities (a double major will satisfy this requirement); or 20 upper-division units of classes outside the Environmental Studies Program constituting an interdisciplinary plan of study focusing on a related field with environmental studies and approved by the undergraduate advisor. A list of upper-division outside concentration courses that satisfy this requirement is available from the undergraduate advisor and on the official major requirement sheet from the College of Letters and Science. Note that any course cross-listed with environmental studies and another department found on the outside concentration list may only apply to one required area, not simultaneously to both the elective area and the outside concentration.

Bachelor of Science— Environmental Studies

The major is divided into three parts: preparation for the major, upper-division requirements within environmental studies, and outside concentration in related areas.

Preparation for the major. Required: Environmental Studies 1, 2, 3; Economics 1 or 2 or 109; Geology 2 or 20 or Geography 3A or 3B; Geography 13; Mathematics 3A-B-C, 5A; Physics 1, 2, 3-L (highly recommended) or 6A-AL-B-BL-C-CL; Chemistry 1A-AL-B-BL-C-CL; MCDB 1A-AL and 1B, EEMB 2 and 3-3L, and either MCDB 1BL or EEMB 2L; one course from PSTAT 5AA-ZZ or 133A or EEMB 30. Also required, one courses from Anthropology 2 or 5; Geography 5; Global Studies 1 or 2; History 7; Political Science 6 or 7 or 12; Sociology 1. And one course from the following list: Philosophy 3 or 4, Political Science 1, Religious Studies 8.

Upper-division requirements.

Area A. All environmental studies majors pursuing the bachelor of science degree must complete 17-18 units in required courses: Geography 172 and 172L or PSTAT 133B or EEMB 146A; Environmental Studies 100, 115, 190; one course from: Environmental Studies 106, 187, or 188 (or Geography 187 or 188).

Area B. In addition, students pursuing the bachelor of science degree must also complete an additional 48 units, 32 of which are selected from upper-division environmental studies courses and the remaining 16 forming an outside concentration of upper-division units of coursework in related natural science depart-

ments. The 32 upper-division environmental studies units are split into two sections. In section B1, students must complete 20 units from the following list: Environmental Studies 105, 111, 114A, 114AL, 114B, 114BL, 120, 121, 133, 140, 144, 147, 148, 149, 152, 158, 162A, 162AL, 163, 168, 169, 170, 171 and 197. The remaining 12 units (Section B2) may be satisfied by completing any environmental studies courses number 101-199, excluding the first 20 units used to satisfy Section B1. No more than 4 units each from Environmental Studies 192, 194, 199, and 199RA will apply, and no more than 8 units of these courses combined will be accepted toward the major.

Outside concentration. The outside concentration may be composed of 16 upper-division units from one of the following science departments (completion of a double major from one of the following departments will satisfy): molecular, cellular, and developmental biology (MCDB); ecology, evolution, and marine biology (EEMB); chemistry; geography (systematics and techniques courses only); geological sciences; mathematics; physics; or probability and statistics. *Note: Geology 101 and Mathematics 100A-B will not apply.* Alternatively, the outside concentration may be interdisciplinary with 16 upper-division units of classes outside the Environmental Studies Program constituting a plan of study focusing on a related field within environmental studies and approval by the undergraduate advisor. A list of upper-division outside concentration courses that satisfy this requirement is available from the undergraduate advisor or from the College of Letters and Science official major requirements sheet. Any course cross-listed with environmental studies and another department found on the outside concentrations list may only apply to one required area, not simultaneously to both the elective area and the outside concentration.

Bachelor of Science—Hydrologic Sciences

The major is divided into three parts: preparation for the major, upper-division core requirements, and one of four concentrations.

Preparation for the major. Required: Mathematics 3A-B-C and 5A; Chemistry 1A-B-C, 1AL-BL-CL; Physics 1, 2, 3-3L (highly recommended), or 6A-AL-B-BL-C-CL; Geology 2; MCDB 1A-AL and 1B, EEMB 2 and 3-3L, and either MCDB 1BL or EEMB 2L; Geography 3A and 3B; PSTAT 5A or EEMB 30. Geology 14 is also required for the geological sciences concentration.

Upper-division requirements. All hydrologic sciences majors must take 21 required units and complete 35 units from one of four concentrations. Required upper-division units are Geography 112, 116 and 116L, Environmental Studies 144 (or Geography 144), and Geology 168, 169 (or Environmental Studies 168, 169).

Concentrations. Majors must complete all required courses of one of the following four concentrations. In addition, the remaining units needed to total 35 must be taken from the elective list.

1. Biological Sciences. Required: EEMB 145A, 145B, 145C and 24 units from the elective list.
2. Chemistry. Required: Chemistry 113A, 130A-B, 150, 150L, Geology 124A, and 15 units from the elective list.
3. Geography. Required: Geography 110, 114A, 114AL, 162A, 162AL, and 21 units from the elective list.
4. Geological Sciences. Required: Geology 103, 104A, 113, 114B, 117, 124A, and 13 units from the elective list.

Upper-Division Concentration Electives:
If a course in this list is required for your chosen concentration, it cannot simultaneously apply as elective units: Chemistry 113A, 113C, either 107A-B or 130A-B-C, 123, 136, 136L, 150, 150L, 173A, 173B; EEMB 111, 120, 120AL-BL, 140, 145A, 145B, 145C, 145AL-BL-CL, 148, 148L, 171; Environmental Studies 134, 192, 197, 199, 199RA; Geography 104, 110, 114A, 114AL, 114B, 114BL, 115B, 115BL, 118, 119, 120, 122A, 128, 130, 162A, 162AL, 165, 168, 172, 172L, 176A-B; Geology 102B, 102BL, 103, 104A, 113, 114A-B, 117, 124AA-ZZ.

Environmental Studies Courses

LOWER DIVISION

1. Introduction to Environmental Studies
(4) MCGINNES

Global effects of human activities raise important questions about the future of the human and other species. This course examines and analyzes representative views on the dynamics of global environmental change and the implications thereof for present and future generations. (F)

2. Introduction to Environmental Science
(4) MANALIS, KELLER

Not open for credit to students who have completed Environmental Studies 12.

Includes human population; sustainability; principles of systems and change, biogeochemical cycles, ecosystems and living resources; energy and living resources; water supply and pollution; toxicology; air pollution, ozone depletion; global warming; waste management; and environmental planning. (W)

3. Introduction to the Environment and Humanities
(4) GRAVES

Not open for credit to students who have completed Environmental Studies 11.

An introduction to the study of the environment and environmentalism from the perspective of the humanities; including history, literature, and philosophy. Consideration of all periods of time and all regions of the world. (S)

UPPER DIVISION

100. Environmental Ecology
(4) SCHIMEL

Prerequisites: Environmental Studies 1, 2, and 3; and, MCDB 5A or EEMB 20 or MCDB 20.

A study of principles of ecology and their implications for analyzing environmental problems. Focus on understanding the processes controlling the dynamics of populations, communities and ecosystems. Specific examples emphasize the application of these concepts to the management of natural resources. (F)

103. Human Population and the Environment
(4) CLEVELAND

Prerequisites: Environmental Studies 1 or Anthropology 2; and, Environmental Studies 3 or Anthropology 5 or MCDB 5B-BL or EEMB 5B-BL.

Same course as Anthropology 103.

The growth and current status of human population around the world, emphasizing sociocultural and biophysical environments. Topics include theories, ideologies, and implementation strategies of population programs; nutrition and agriculture; basic demographic tools; human and reproductive rights; policy options for the future. (S)

104. People, Poverty, and Environment in Central America
(4) STONICH

Prerequisite: Environmental Studies 1 or 3 or Anthropology 2.

Same course as Anthropology 104H.

Analysis of the interrelated social, demographic, economic, political, and environmental crises occurring in Central America from an anthropological perspective. Emphasis on the evolution of contemporary problems, current conditions, and future prospects for the region.

105. Solar and Renewable Energy
(4) MANALIS

Prerequisites: Environemtnal Studies 2; and, Mathematics 3A-B or 34A-B.

How solar and renewable energy fits with environmental-energy options in both developed and developing nations. Technologies are studied in terms of their effects on the physical, social, and biological environment. Demonstrations, field trips, and guest lecturers. (S)

106. Critical Thinking and Environmental Argument
(4) CLEVELAND

Prerequisites: Environmental Studies 1, 2, and 3; and upper-division standing.

The study and development of the intellectual tools needed to analyze, criticize, and construct environmental arguments. Specific topics include logic, systems analysis, risk analysis, and sustainability criteria with special attention to the literate, numerate, and ecolate perspective. (W)

107. History of Global Environmental Problems
(4) OSBORNE

Prerequisites: Environmental Studies 1 or 3, or one course from History 4A-B-C, 106A-B-C, 107A-B-C.

Same course as History 107G.

Survey of global environmental problems from antiquity to the present. Topics include demography, agriculture, climate change, disease, and storage of toxic waste.

107C. History of the Biological Sciences: circa 1800 to Present
(4) OSBORNE

Prerequisite: History 4B or 4C or 17B or 17C or 106A or 106B, or upper-divsion standing.

Same course as History 107C.

The work of Cuvier and Lamarck, natural theology, geology, Darwin, evolution, natural selection, genetics, heredity, variation, modern synthesis, reductionism, population ecology, and molecular biology. (F)

107E. History of Animal Experimentation
(4) GUERRINI

Prerequisite: upper-division standing.

Same course as History 107E.

Period: antiquity to present. Topics include the nature of experiment, its role in various research programs, social and cultural contexts, the moral status of animals, the ethics of animal experimentation, and scientific opposition.

110. Disease and the Environment
(4) GUERRINI

Prerequisite: Environmental Studies 1 or 3.

The interaction of human and animal disease and the environment through case studies, from the Black Death of 1300's to AIDS and the Ebola virus. "Environment" is broadly defined to include both natural and built environments. (W)

111. The California Channel Islands
(4) STAFF

Prerequisites: MCDB 5B or EEMB 5B or 20; and, Geography 3A-B, or Geology 2, or Environmental Studies 2.

Same course as Geography 149.

Recommended preparation: introductory chemistry and biology.

Discussion of biological, geological, ecological, anthropological, and oceanographic characteristics of the Channel Islands area as well as the management and human uses of this region. Emphasis on islands and ocean waters off Southern California. (S)

114A. Biogeochemistry of the Soil Environment
(4) CHADWICK

Prerequisites: Chemistry 1A-B; and, Geography 3B or Geology 2; concurrent enrollment in Environemtnal Studies 114AL.

Same course as Geography 114A.

Introduction to the chemical, hydrological, and biological characteristics of soils, their global distribution, and their response to management. (F)

114AL. Soil Science Lab
(1) CHADWICK

Prerequisites: concurrent enrollment in Environmental Studies 114A.

Same course as Geography 114AL.

Field and laboratory projects designed to provide an understanding of soil-landscape distribution, soil morphology, and the physical and chemical properties that influence management decisions. (F)

114B. Soil Genesis and Classification
(4) CHADWICK

Prerequisites: Environmental Studies 114A; concurrent enrollment in Environmental Studies 114BL.

Same course as Geography 114B.

Introduction to the chemical, physical, and biological processes that produce soil and influence their management. The morphology, genesis, classification, and global distribution of soil will be emphasized. (S)

114BL. Sampling and Analysis of Soils Lab
(1) CHADWICK

Prerequisite: concurrent enrollment in Environmental Studies 114B.

Same course as Geography 114BL.

A chance to gain knowledge of soil sampling and laboratory procedures. Labs cover field site selection, soil description, sampling, laboratory preparation of soil samples, and selected chemical and physical analyses. (S)

115. Energy and the Environment
(4) MANALIS

Prerequisites: Environmental Studies 2; and, Mathematics 3A-B or 34A-B; and, Economics 1 or 2 or 109.

Focus on learning how to use energy efficiently in accordance with the laws of thermodynamics and in harmony with the environment. Topics include the nature of energy and the fundamentals for a sustainable environmental energy policy. (W)

116. The Urban Environment
(4) STAFF

Recommended preparation: Environmental Studies 1 or 2 or 3 or Geography 5.

Survey of problems and prospects of the urban environment focusing on city-suburb-rural relationship. Investigation of emerging issues including sustainable communities and new urbanism. Field trips offered. (W)

118. Industrial Ecology: Designing for the Environment
(4) MANALIS

Prerequisites: Environmental Studies 1, 2, and 3.

Not open for credit to students who have completed Environmental Studies 193IE.

Industrial ecology is a philosophical and methodical framework interwoven with concepts in ecology and economics used to aid in understanding how industrial systems interact with the environment. Capital, energy, and material flows are examined and viewed in cultural context. (S)

120. Toxics in the Environment
(4) STAFF

Prerequisites: Environmental Studies 1, 2, 3; and, EEMB 20 or 5B; and, Chemistry 1A or Natural Sciences 1B.

Recommended preparation: Chemistry 1B and 1C; a course in introductory statistics; electives in biology, biochemistry, and pharmacology.

Effects and implications for the future of introducing toxins into the biosphere. Examination of physiological and biochemical effects and the mechanisms of action of potential toxins. Discussion of methodological approaches and legal ramifications of studies in environmental toxicology. (F)

121. Environmental Health Risk Analysis
(4) STAFF

Prerequisites: Environmental Studies 1, 2, 3; and, Chemistry 1A-B-C or 101; and, PSTAT 5A-Z (one course from series) or EEMB 30.

Recommended preparation: Mathematics 3A or 34A; Environmental Studies 120; electives in biology.

Examination of risk assessment through quantitative methods for evaluating environmental health risks. Risk management and risk communication are presented by identifying the decision-making process of comparing risk versus costs.

122NE. Cultural Representations: Nature and the Environment
(4) STAFF

Prerequisites: Writing 2 or 50 or 109 (one course from series) or English 10 or upper-division standing.

Same course as English 122NE.

Perceptions of nature have changed throughout the history and vary across cultures. Course explores changing expressions of our changing relations to the world we live in, with emphasis on cultural movements (films, literature, newspapers, etc.) that have affected contemporary American experience. (S)

124. Environmental Dispute Resolution
(4) MCGINNES

Prerequisites: Environmental Studies 1; upper-division standing.

An examination of the history and methodology of conflict resolution alternatives, such as negotiation and mediation, as applied to environmental disputes. (W)

125A. Principles of Environmental Law
(4) MCGINNES

Recommended preparation: Environmental Studies 1; upper-division standing.

An introduction to the history and methodology of law as it relates to human use of the environment. (F)

125B. Land Use and Planning Law
(4) MCGINNES

Prerequisite: Environmental Studies 125A.

An examination of local, state, and federal laws regulating land use and development. Selected problems analyzed through case studies. (W)

126A. Environmental Law: Simcoast
(4) MCGINNES

Prerequisites: Environmental Studies 125A-B.

Simulation of the planning and permitting process under current coastal protection laws. Students play roles in game situations based on actual cases from legal dockets.(S)

127. Concepts of Environmental Education
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3.

A critical look at educational programs and teaching methods which concentrate on the development of environmental awareness and the shaping of environmental values. Understanding underlying concepts. Focus on programs which emphasize study of the natural environment and problem-solving skills. (S)

130A. Third World Environments: Problems and Prospects
(4) STONICH

Prerequisite: Environmental Studies 1 or 3 or Anthropology 2.

Same course as Anthropology 130A.

Examination of the human dimensions of globalization/global environmental change from the Third World. Emphasis on the sociocultural context of environmental destruction, environmental justice, and interdisciplinary approaches. (W)

130B. Third World Environments: Conservation and Sustainable Development
(4) STONICH

Prerequisite: Environmental Studies 130A or Anthropology 130A.

Same course as Anthropology 130B.

Focus on conservation and sustainable development. Includes examination of contending views of sustainable development. Special emphasis on tourism, agricultural, fisheries, and aqua-cultural development in the Third World. (S)

130C. Third World Environments: Response and Resistance
(4) STONICH

Prerequisites: Environmental Studies 130A and 130B; or, Anthropology 130A and 130B.

Same course as Anthropology 130C.

Concerned with response and resistance to economic globalization, impoverishment, and environmental degradation: household economic strategies; migration, urbanization; social conflict; environmental movements of the poor; the information revolution; and alternative development strategies.

131. International Environmental Law and Diplomacy
(4) MCGINNES

Prerequisite: Environmental Studies 1 or 2 or 3.

An examination of the roles of international law and diplomacy in addressing environmental issues and problems. Historical, theoretical, and practical aspects explored through case studies. (S)

132. Human Behavior and Global Environment
(4) STAFF

Study of global environmental impacts of major human technological innovations, including the use of fire, development of agricultural tools, and the process of industrialization. Evaluation of prospects for altering human behavior to encourage sustainable development is included.

133. Biodiversity and Conservation Biology
(4) MAZER, ROTHSTEIN

Prerequisite: EEMB 5C.

Same course as EEMB 133. Not open for credit to students who have completed Biology 133.

Field methods, literature, computer use, and underlying theory important to biodiversity research. Use of preserved and living collections by ecologists, conservation biologists, and evolutionists to detect evolutionary processes and threats to biological communities; to measure ecological processes and biodiversity. Field trips.

134. Coastal Processes and Management
(4) STAFF

Prerequisites: Environmental Studies 2 or Geological Sciences 2 or Geography 3A or 3B; and, Mathematics 3A or 34A.

Recommended preparation: introductory biology.

Using representative coastal regimes, students study the major processes at work in our nation's coastal zones and examine the nature and efficacy of the planning and management programs that have been put in place in these areas. (F)

135A. Principles of Environmental Planning
(4) WACK

Prerequisites: Environmental Studies 1, 2, and 3.

Recommended preparation: Environmental Studies 116.

Introduction to the history, theory, and trends of

urban, regional, and environmental planning in both California and the United States. Field trips to local urban areas. (W)

135B. Advanced Environmental Planning
(4) WACK

Prerequisite: Environmental Studies 135A.

Advanced seminar applying principles presented in Environmental Studies 135A to regional and local government planning processes. Field analysis of local planning issues. (S)

140. Management of Renewable Resources: Biological Principles and Techniques
(4) STAFF

Prerequisites: Environmental Studies 100; and, Mathematics 3A-B or 34A-B; and upper-division standing.

Introduction to the ecological principles common to wildlife, range, and forest management. Discussion of the historic development of these disciplines and a survey of management practices and applications. Case studies and field trips. (F)

143. Endangered Species Management
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3.

Recommended preparation: Environmental Studies 125A.

Examination of the protection and management of endangered species through analysis of the state and federal Endangered Species Acts. Topics include biodiversity, speciation and extinction rates, the history of endangered species legislation, and selected species' case studies. (W)

144. Form, Process, and Human Use of Rivers
(4) KELLER

Prerequisites: Mathematics 3A-B or 34A-B.

Same course as Geography 144.

Recommended preparation: Physics 1 or 6A/AL or Geological Sciences 117.

Basic understanding of fluvial (river) hydrology. In-depth evaluation of channel form and fluvial processes and impact of human use on rivers.

146. Animals in Human Society: Ethical Issues of Animal Use
(4) SHELTON

Prerequisite: upper-division standing.

Recommended preparation: Environmental Studies 1 or 3.

An exploration of the ethical issues which arise when humans interact with other animals, and an examination of conflicting attitudes toward the value of animal life in such specific areas as food production, recreational activities, research and environmental protection. (W)

147. Air Quality and the Environment
(4) CLARK

Prerequisites: Mathematics 3A-B-C or 34A-B; and, Chemistry 1A-B-C and 1AL-BL-CL.

Types, sources, effects, and control of air pollution. Topics include gaseous pollutants particulates, toxic contaminants, atmospheric dispersion, photochemical smog, acid rain control measures, the Clean Air Act and regulatory trends, indoor air. (F)

148. Indoor Air Quality
(4) STAFF

Prerequisites: Mathematics 3A-B-C and Chemistry 1A-AL-B-BL-C-CL.

The current understanding of indoor air pollution and its health effects. A review of the nature of indoor gas dynamics and basic techniques for designing healthful buildings. Various sources of common indoor toxins and the evaluation of their health effects. Case studies are reviewed.

149. Agriculture, Environment and Society
(4) CLEVELAND

Prerequisite: Environmental Studies 1 or 3 or Anthropology 5.

Same course as Anthropology 149.

The evolution of agriculture and current problems of agricultural development, emphasizing sociocultural and biophysical environments. Topics include theories, ideologies, and implementation strategies of agricultural development, households and women; irrigation; crop genetics resources and biotechnology; integrating indigenous and modern scientific knowledge. (F)

152. Applied Marine Ecology
(5) SCHMITT, GAINES

Prerequisites: Environmental Studies 100 or EEMB 5B or MCDB 5B or EEMB 5C; and, Mathematics 34A.

Same course as EEMB 152. Not open for credit to students who have completed Biology 152.

Recommended preparation: EEMB 120.

Introduction to the application of ecological principles and methods to environmental problems in marine habitats. Focus on problems that are local, regional, and global in scale. Concepts illustrated with case studies. (W)

158ES Crop Genetic Resources: Evolution, Use, and Conservation
(4) CLEVELAND

Prerequisites: Environmental Studies 1 or 3 or Anthropology 2; and, EEMB 5B or 20 or Anthropology 5.

Same course as Anthropology 158.

Domestication and varietal diversification of crops, their current use in small-scale, traditionally-based, and modern industrial agriculture, and their conservation in farmers' fields and genebanks; including case studies of crops and farming systems. (W)

160. American Environmental Literature
(4) SCHLENZ

Prerequisites: Environmental Studies 1 or 3; and Writing 2.

Not open for credit to students who have completed Environmental Studies 193EL.

Assesses contributions of literary texts to American environmental movements. Examines influences of writers such as Thoreau, Rachel Carson, and Edward Abbey upon environmental perceptions, values, and attitudes in American cultural history and upon rhetorics and politics of contemporary environmental debates. (F)

161. Environmental Journalism: A Survey
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3.

A study of how environmental issues are and should be reported by all types of news media. Students will be assigned to write several environmental news and feature stories.

162A. Water Pollution
(4) LOAICIGA

Prerequisite: concurrent enrollment in Environmental Studies 162AL.

Same course as Geography 162A. Not open for credit to students who have completed Geography 162.

Human contamination of aquatic environments with emphasis on surface waters, groundwaters, and oceans. Water quality characteristics, modeling and modification. Legislative framework and methods of pollution control. (S)

162AL. Laboratory in Water Pollution
(1) LOAICIGA

Prerequisite: concurrent enrollment in Environmental Studies 162A.

Same course as Geography 162AL. Not open for credit to students who have completed Geography 162.

Field trips to water treatment plants, labs on water sampling and analysis; PH, DO, BOD, hardness, EC tests. (S)

163. Environmental Analytical Methods
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3; and, Chemistry 1A-AL.

Analysis of the tools and techniques used to assess the multi-media (air, water, and waste) impacts from pollution sources. Emphasis on the principles of environmental auditing in evaluating compliance with applicable environmental laws and regulations.

165A. Environmental Impact Analysis
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3.

Analyzes the historical and theoretical approaches to environmental assessment methodology and procedures for preparing and reviewing environmental impact reports. (F)

165B. Environmental Impact Analysis
(4) STAFF

Prerequisites: Environmental Studies 165A.

Advanced seminar focuses on environmental inventories, proposals, and environmental impact report analysis and preparation. (W)

168. Aqueous Transport of Pollutants
(4) CLARK

Prerequisite: Mathematics 3B or 34B.

Same course as Geological Sciences 168.

Recommended preparation: Environmental Studies 144.

Focus on the behavior of dissolved species in rivers. Examination of the basic advection-diffusion model. Particular emphasis on field data. (W)

169. Tracer Hydrology
(4) CLARK

Same course as Geological Sciences 169.

Recommended preparation: Geological Sciences 173-173L or Geography 116-116L.

Introduction to principles of chemical and isotope tracer hydrology. Emphasis on methods of groundwater dating, the use of tracers as management tools, and contaminate plume monitoring. (S)

170. Environmental Geology
(4) KELLER

Prerequisite: Geological Sciences 3 or Geography 3B or Environmental Studies 2.

Same course as Geological Sciences 170.

Introduction to the entire spectrum of possible interactions between people and the geologic environment with the emphasis on natural hazards, resources, and land-use planning.

171. Ecosystem Processes
(4) SCHIMEL

Prerequisite: Environmental Studies 100 or EEMB 5BL or MCDB 5B.

Same course as EEMB 171. Not open for credit to students who have completed Biology 171.

Recommended preparation: EEMB 120.

An examination of carbon and nutrient cycling in terrestrial ecosystems. Specific foci will include: a) plant-soil linkages including decomposition and nutrient supply, and b) the role of above- and below-ground community composition on element cycles. (W)

172. Integrated Materials and Waste Management
(4) STAFF

Prerequisites: Environmental Studies 1, 2, and 3.

Recommended preparation: introductory chemistry and economics; electives in biology and natural resources.

Addresses how waste has been regarded and managed through the ages to the present. Emphasis on the technological, policy, and economic dimensions of modern materials and waste management, such as landfill, conservation technologies, waste reduction, recycling and composting. (F)

173. American Environmental History
(4) STAFF

Prerequisite: Environmental Studies 1 or 3 or a lower-division course in history.

Same course as History 173T.

Traces the history of American attitudes and behavior toward nature. Focus on wilderness, the conservation movement, and modern forms of environmentalism. (S)

174. Environmental Policy and Economics
(4) KOLSTAD

Prerequisite: Economics 1 or 109.

Introductory course on economic analysis of environmental policy. Topics include cost-benefit

analysis, incentives and regulation, and an overview of United States environmental policy. (S)

175. Environmental Economics
(4) KOLSTAD
Prerequisite: Economics 100B or 104B.
Same course as Economics 115.
Course provides a rigorous treatment of environmental economics. Topics include welfare analysis, ethical dimensions of economic criteria for protecting the environment, measuring the demand for environmental goods, property rights, economic incentives, including marketable permits and emission fees, and regulating risk. (W)

179. Natural Resource Economics
(4) DEACON
Prerequisite: Economics 100B or 104B.
Same course as Economics 122.
Microeconomic theory and capital theory applied to problems of conservation and management of natural resources. Analysis of public policy with special emphasis on nonrenewable energy resources, management of forests, deforestation and species extinction, and use of fish and game resources. (S)

185. Environmental Justice
(4) STONICH
Prerequisite: Environmental Studies 1 or 3 or Anthropology 2.
Same course as Anthropology 185.
Examines the nexus of race, ethnicity, gender, environmental issues, and the interconnections between social and environmental justice in the U.S. and other industrialized countries.

187. The Idea of Nature
(4) PROCTOR
Prerequisite: Geography 5 or Environmental Studies 1 or 3.
Same course as Geography 187.
Examination of recent western perspectives on the biophysical realm as expressed through science and popular culture. Emphasis on major theoretical disputes and possibilities for reconceptualizing nature.

188. The Ethics of Human-Environment Relations
(4) PROCTOR
Prerequisite: Geography 5 or Environmental Studies 1 or 3.
Same course as Geography 188.
Survey of contemporary environmental ethics, focusing on both philosophical and applied issues. Topics include anthropocentrism and its alternatives, the role of science and aesthetics, multicultural perspectives and the problem of relativism, and the conflict between radical and reformist environmentalism. (W)

189. Religion and Ecology in the Americas
(4) TALAMANTEZ
Prerequisite: a lower-division environmental studies or religious studies course.
Same course as Religious Studies 193.
An overview of the growing field of religion and ecology in the Americas. Focus on spiritual traditions and land-based knowledge indigenous to the Western Hemisphere. (S)

190. Colloquium on Current Topics in Environmental Studies
(1) STAFF
This course is required by majors for graduation. May be repeated for credit to a maximum of 3 units.
Required attendance at six public lectures dealing with environmental topics. Weekly discussion sections on the lectures and brief written evaluations of six lectures. Open to all students. (F,W,S)

192. Internship in Environmental Studies
(1-12) STAFF
Prerequisites: upper-division status; environmental studies majors only; consent of department.
Students must have a 3.0 overall grade-point average. May be repeated for credit to a maximum of 12 units but only 4 units count toward the major; offered P/NP only.
Opportunities to learn about practical approaches to environmental problem solving by working under faculty direction as interns with local, state, and federal agencies concerned with the environment or with private research and business organizations. Periodic and final reports will be part of the internship. (F,W,S,SS)

193AA-ZZ. Special Topics in Environmental Studies
(1-5) STAFF
Prerequisite: upper-division standing.
May be repeated for credit up to a maximum of 16 units provided letter designations are different, but only 8 units may be applied to the major.
One-time courses taught by lecturers or guest professors on a special area of interest in environmental studies. Specific course titles and topics to be announced by the Environmental Studies Program each quarter.

194AA-ZZ. Group Study
(1-5) STAFF
Prerequisites: upper-division status; consent of instructor.
May be repeated for credit up to a maximum of 12 units, but only 4 units may be applied toward the major.
Directed group reading, study, and research on specific subjects for environmental studies majors. Admission by specific arrangement with the environmental studies chair.

197. Senior Thesis
(6) STAFF
Prerequisite: upper-division standing.
Students must have an overall grade-point average of 3.0. Course normally taken in the senior year.
This course is required for students completing the Environmental Studies Senior Honors Program. After an acceptable topic and advisor have been established, each class member will develop, write, and present a thesis. (F)

199. Independent Investigation in Environmental Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in environmental studies; open to environmental studies majors only; consent of department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 4 units may be counted toward the major.
Directed research in the characteristics and problems of the environment. (F,W,S)

199RA. Independent Research Assistant in Environmental Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in environmental studies; open to environmental studies majors only; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Coursework shall consist of directed faculty research assistant. (F,W,S)

Film Studies

Department of Film Studies,
Division of Humanities and Fine Arts,
Ellison Hall 1720;
Telephone (805) 893-2347
E-mail: fsoadmin@humanitas.ucsb.edu
Web site: www.film-studies.ucsb.edu
Department Chair: Constance Penley

Faculty

Edward Branigan, Ph.D., University of Wisconsin, Madison, Professor (film theory, aesthetics, narrative, point-of-view, Japanese cinema)

Dana Driskel, M.F.A., University of Southern California, Lecturer (film production, animation)

Anna Everett, Ph.D., University of Southern California, Assistant Professor (film and television history and theory, black film, digital media technologies)

Lisa Parks, Ph.D., University of Wisconsin, Madison, Assistant Professor (global media and broadcast history, cultural studies)

Constance Penley, Ph.D., UC Berkeley, Professor (film history and theory, media studies, literary and rhetorical studies, cultural studies, feminist theory, science and technology studies, contemporary art)

Bhaskar Sarkar, Ph.D. expected, University of Southern California, Acting Assistant Professor (international cinema)

Janet Walker, Ph.D., UC Los Angeles, Associate Professor (documentary, historiography, women and film)

Charles Wolfe, Ph.D., Columbia University, Associate Professor (international film history, American film and cultural history, documentary film, photography, new media, comedy)

Emeriti Faculty

Naomi Greene, Ph.D., New York University, Professor Emerita (French and Italian film)

Alexander Sesonske, Ph.D., UC Los Angeles, Professor Emeritus (silent comedy, Russian cinema, Jean Renoir)

Affiliated Faculty

Jacqueline Bobo, Ph.D. (Women's Studies)

Victor F. Fuentes, Ph.D. (Spanish and Portuguese)

Harry Lawton, Ph.D. (French and Italian)

Suzanne Jill Levine, Ph.D. (Spanish and Portuguese)

Laurence A. Rickels, Ph.D. (Germanic, Slavic, and Semitic Studies)

Colin Gardner, Ph.D. (Art Studio)

Devoted to the study of film as a humanistic discipline, the Department of Film Studies at UCSB has as its primary emphasis film history, film theory, and film analysis. In addition to requirements for the major, a wide variety of electives is also offered, ranging from courses in national cinemas and important directors and genres to seminars on special topics. Production is not emphasized, but all majors become familiar with the basic tools of filmmaking.

Interested students may also take courses in screenwriting and advanced film production.

Beyond the core requirements of the film studies major, the student may develop an individual program centered around special interests and goals. Students who wish to know more about the film studies major are invited to talk with an advisor in the film studies office.

The film studies major is designed to prepare students for careers in the film industry and film education, as well as library science, entertainment law, publishing, journalism, and new media.

Additional French language courses are recommended for students interested in spending their junior or senior year with Education Abroad's Paris Film Program.

Students with a bachelor's degree in film studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Grants, Awards, Prizes

Several fellowships, awards, and prizes are available to the undergraduate film major: the President's Undergraduate Fellowship, the May Company Fellowship, UCSB Foundation Honors Awards, and Genesis Research Awards provide grants for students working on projects with anticipated expenses in excess of $300. The Paul N. and Elinor T. Lazarus Endowed Scholarship in Film Studies is awarded annually to a film studies major of exceptional enthusiasm, dedication and accomplishment, and demonstrated talent and promise in film or television writing covering one year's registration fees. The Alexander Sesonke Prize is given annually for best scholarly essay on film history, criticism or theory with prizes up to $1,000. The Sherrill C. Corwin Awards are given annually for best screenplay short film in awards up to $750. The David F. Siegel Award is made annually to a film studies major who has demonstrated drive, tenacity, and courage in the face of adversity in the amount of $1000. The Paul Lazarus Screenwriting Award for Best Short Screenplay is given annually with prizes up to $250.

Graduation with Distinction in Film Studies (The Senior Honors Program)

The honors program in film studies provides the opportunity for qualified majors to undertake advanced film research or creative written work. Through successful performance in the honors program a student may achieve the degree award of Distinction in the Major.

Majors who have completed two quarters of the junior year with a minimum grade-point average of 3.30 will be invited by the Department of Film Studies to apply for admission to the honors program. The application includes: (1) a 500-word prospectus, outlining the nature and scope of the project and the plan for carrying it out; (2) a statement of sponsorship from the faculty member who will supervise and evaluate the project. Applications are due no later than the tenth week of classes for admission to the program in the following quarter.

The project is to be a research or critical essay of not fewer than 40 pages or a completed, feature-length screenplay, accompanied by a critical self-assessment of the project. The program is comprised of two related courses (4 units each) to be taken in two quarters of the senior year. These must be taken consecutively. The first course is Independent Studies (Film Studies 199), which must be taken for a letter-grade and will not count as a film studies elective. During the quarter the student, guided by the sponsoring faculty member, completes the required research and submits for formal evaluation a draft of the essay or creative work. The second course is a senior honors seminar (Film Studies 196) during which the student completes the honors project; this course may be used as a film studies elective.

Other Opportunities

Students can acquire valuable technical experience during their study at UCSB. They may find work with Instructional Resources, a campus service department where film and video equipment is used daily. Also students are often able to intern at local commercial or cable television stations, production companies, the Santa Barbara International Film Festival, and the county film commission office. Summer internship opportunities in the Los Angeles area are plentiful. Academic credit of 2 units is normally granted for intern work. Undergraduate research assistantships with faculty are also available.

The film studies journal, *Focus Magazine*, an annual publication by and for undergraduate film students, publishes exceptional work including student writing on film, interviews with filmmakers, and book reviews.

Camera Obscura: Feminism, Culture, and Media Studies, the only English-language publication devoted to the study of women and representation in the visual media and arts, is considered to be a foremost journal of film and cultural theory and offers editorial internship opportunities. Based in the Department of Film Studies, the journal is edited by Constance Penley (UCSB), Patricia White (Swarthmore), Phillip Brian Harper (NYU), Lynne Joyrich (University of Wisconsin-Milwaukee), Sasha Torres (Johns Hopkins), and Sharon Willis (University of Rochester).

The department also houses *Screening Noir*, the publication of the African and African-American caucus of the Society for Cinema Studies under the editorship of Anna Everett (UCSB).

Career Opportunities. The motion picture industry is divided into three major segments: production, distribution, and exhibition with career opportunities in each area. In addition to the commercial film industry, there are several related areas of employment to consider. Home entertainment (TV and interactive media) is a rapidly expanding industry. Also companies which produce TV commercials, industrial films, trailers, or mixed media presentations often accept trainees. Non-profit and educational media is yet another career path.

Undergraduate Program

Bachelor of Arts—Film Studies

Preparation for the major. Required: Film Studies 46. One literature or drama course chosen from Dramatic Art 60, 106, 155A-B, 156, 160D-E-F, 161B; English 114AA-ZZ, 120, 121, 124, 126D, 128AA-ZZ, 131, 133AA-ZZ, 134AA-ZZ, 136C, 138C, 140, 150, 154, 184, 185, 186, 187, 188, 189, 191, 192, 193; French 167, 169AX, 169CX, 170X, 172X, 180A-B-C, 180X, 181, 181X, 183X, 185, 192X, 194X, 196X, 193X; Italian 125X, 139Z, 142X; German 131, 132, 138, 139, 141, 143, 150A, 151B, 157A, 175, 180, 182, 186; Spanish 115B, 120A-B, 135, 136, 171, 179, 182; one history course chosen from History 4C, 105, 123B-C, 124B, 126B, 128F, 128Q, 130B, 131F, 133B-C, 135C, 137A-B, 138B, 141B, 145D, 145Q, 146B, 146T, 147B, 151C, 151W, 153L, 156B, 159A-B-C, 160B, 163A-B, 166A-B-C, 167B, 167CB, 168A-B, 168E, 169BR-CR, 170A-B, 171B, 173B, 173S, 175B, 176A-B, 178M, 179B, 181, 182B, 185B, 187C; one music course chosen from Music 15, 17, 114, 168B-C-D-E-F, 175A-B-C-D-E-F-G-H-I-J; one art history course chosen from Art History 6C, 6G, 119A-B-C, 121C, 123B-C, 125B, 136B-C-D-F, 138C-D-E, 140C; 143A-B-C-D.

Upper-division major. Required: Fifty-two upper-division units including (1) Film Studies 101A-B-C (each course is 5 units); one production course chosen from Film Studies 102, 104, 107; Film Studies 146 (a 5-units course), 192A, and 192B; and (2) 20 additional upper-division units chosen from the following, with at least 4 units each from A, B, and C.

A. Seminars in Theory and Analysis: Film Studies 187AA-ZZ (may be repeated), 189AA-ZZ (may be repeated), 190AA-ZZ (may be repeated), 191, 193, 194 (may be repeated), 196.

B. National Cinemas: Black Studies 171; Chinese 141, Film Studies 120, 121, 122AA-ZZ, 123, 132, 133, 136, 137, 178Z; French 178X-Y-Z, 190X; German 136, 180Z; Italian 180Z; Japanese 159; Spanish 126, 127.

C. Film and Social Issues: Black Studies 161, 162, 170, 172; Chicano Studies 143, 147, 185; Film Studies 125A-B, 161, 163, 165; French 191X; Women's Studies 141, 142, 143, 144, 150.

D. Other Electives: Directors—Film Studies 154, 155AA-ZZ. Genre—Film Studies 107, 128, 130, 140, 142, 143, 144, 145, 147, 150AA-ZZ, 169, 170, 175, 180; French 138X; German 183. Screenwriting—Film Studies 188A-B-C. Other—Film Studies 110, 151A-B-C-D-E, 184.

Offerings in Film Studies Grouped by Subject Matter:

I. Lower Division
46. Introduction to Cinema
46MS. Major Seminar
54. Hollywood: Anatomy of an Industry
99. Independent Studies

II. Film Production
102. Acting and Directing Workshop
103. Project Development for the Short Film
104. Film Technology
106A-B. 16mm Crew Production
107. Animation

108. 16mm Production
109AA-ZZ. Special Topics in Film Production
188A. Basic Screenwriting
188B. Advanced Screenwriting
188C. Writing Short Films

III. History
101A. History of Cinema: The Silent Film
101B. History of Cinema: The Advent of Sound Film
101C. History of Cinema: Neorealism and After
110. The Hollywood Studio

IV. Period Cinema
151A. American Film: The 1930s
151B. American Film: The 1940s
151C. American Film: The 1950s
151D. American Film: The 1960s
151E. American Film: The 1970s

V. National Cinemas
120. Japanese Cinema
121. Chinese Cinema
122AA-ZZ. Topics in National Cinemas
123. German Cinema
132. French New Wave Cinema
133. Soviet Cinema, 1917 to 1945
136. British Cinema
137. Eastern European Cinema
138. Women and Eastern European Film: An Exploration in Second World Cinema
178Z. Technology and Cinema

VI. Directors
154. European Directors in Hollywood
155AA-ZZ. Directors

VII. Documentary/Social Reality
125A-B. Documentary Film
161. Third World Cinema
163. Women and Film: Feminist Perspectives
165. Film and Social Reality

VIII. Genre
107. Animation
128. Silent Film Comedy
130. Sound Film Comedy
140. The Western
142. The War Film
143. Science Fiction Film
144. The Horror Film
145. Melodrama
147. The Thriller
150AA-ZZ. Topics in Film Genre
169. Film Noir
170. The Musical Film
175. Experimental Film

IX. Analysis
146. Advanced Film Analysis
184. Film Music
187AA-ZZ. Special Topics in Film Analysis
190AA-ZZ. Studies in Film and the Other Arts
193. Film Narrative

X. Theory and Criticism
189AA-ZZ. Topics in Contemporary Film Theory
191. Film Criticism
192A. Classical Film Theory
192B. Contemporary Film and Media Theory

XI. Advanced Studies
194. Advanced Readings
195I. Internship in Film/Television
196. Senior Honors Seminar
199. Independent Studies
199RA. Independent Research Assistance in Film Studies

Film Studies Courses

A list of film courses with descriptions will be posted outside the film studies office before the beginning of each new quarter, as close to the start of registration as possible. Students are urged to consult this list before registering.

LOWER DIVISION

46. Introduction to Cinema
(4) STAFF
Recommended preparation: Concurrent enrollment in Film Studies 46MS is highly recommended for film majors.

An introduction to the study of film as an aesthetic and social phenomenon, and to various methods of critical analysis. (F,W,S)

46B. Critical Writing for Visual Media Technologies
(4) STAFF

A writing intensive course that introduces students to a range of contemporary media including TV, video, and digital media. Close analysis of specific histories and aesthetics of these changing media will be emphasized.

46MS. Major Seminar
(2) STAFF
Prerequisite: concurrent enrollment in Film Studies 46.

Designed for film studies majors and students contemplating a major or concentration in film. An intensive introduction to the study of film and to various methods of critical analysis.

54. Hollywood: Anatomy of an Industry
(2) STAFF
Course may be repeated for credit to a maximum of 6 units.

In-depth analysis of the changing cinema world of the 1990s developed in intimate dialogues with major Hollywood players. Focus may be on areas such as escalating production costs, diversification, colorization of film, the foreign market, directing, screenwriting, acting, etc.

99. Independent Studies
(1-4) STAFF
Prerequisites: consent of instructor and department. Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit to a maximum of 8 units. Students are limited 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No unit credit allowed toward the major.

Selected research under the direction of a faculty member.

UPPER DIVISION

101A. History of Cinema: The Silent Film
(5) STAFF
Prerequisites: Film Studies 46. Open to film studies majors only.

International film history from the camera obscura to the close of the silent era in the late 1920's. Historical accounts of film as an aesthetic form, a social force, an economic institution, and a technology will be considered. (F)

101B. History of Cinema: The Advent of Sound Film
(5) STAFF
Prerequisites: Film Studies 46. Open to film majors only.

International film history from the advent of talkies to World War II. Historical accounts of film as an aesthetic form, a social force, an economic institution, and a technology will be considered. (W)

101C. History of Cinema: Neorealism and After
(5) STAFF
Prerequisites: Film Studies 46. Open to film studies majors only.

International film history since 1945. Historical accounts of film as an aesthetic form, a social force,

Janet Walker
ASSOCIATE PROFESSOR, FILM STUDIES

From the silent screen era to texts produced by new technologies, associate professor Janet Walker explores the history of film and its relation to society in her undergraduate lecture and seminar-style courses.

"I'm trying to teach critical thinking and critical writing skills," she explains. "That's the most important thing: the ability to look at a text and see how the film language works and how it communicates meaning." That knowledge can then be applied not just to film, "but to television, the Internet, and any other new technologies that involve sound and image."

"I'm trying to teach critical thinking and critical writing skills. That's the most important thing."

She hopes her students absorb not only the course context, but the historiographical concepts behind it.

"It's probably not as important that students remember the titles of, say, Mabel Normand's films, as that they inquire into the reasons why her name–and many of the films themselves–were lost to film history."

an economic institution, and a technology will be considered. (S)

102. Acting and Directing Workshop
(4) STAFF
Prerequisites: Film Studies 46; consent of instructor. Open to upper-division film majors only.

Designed as an introduction to the fundamentals and interaction of acting and directing in the creative process of producing a film or video. Every student will write, perform in, direct, and record on video a short work.

103. Project Development for the Short Film
(4) DRISKEL
Prerequisites: Film Studies 46; and, Film Studies 104 or 106A-B; and consent of instructor.

A workshop approach to the development of a short film project. Course covers writing, budget, preparation, and preproduction, with particular attention to final distribution needs.

104. Film Technology
(4) DRISKEL
Prerequisite: Film Studies 46. Open to film majors only.

An introduction to the technology, equipment, and materials of filmmaking from Edison to computer graphics. Special attention to the historical breakthroughs that have influenced cinematic trends and directions.

106A-B. 16mm Crew Production
(4-4) DRISKEL
Prerequisites: Film Studies 46; and, Film Studies 102 or 104 or 107; and consent of instructor.

Instruction in the basic techniques of 16mm filmmaking via the production of crew projects over two consecutive quarters.

A. Preproduction through principal photography. (F)
B. Postproduction through composite print. (W)

107. Animation
(4) DRISKEL
Prerequisite: Film Studies 46. Open to film majors only.

A look at the techniques and history of animation with emphasis on the major styles and methods of production, including cel, direct, photo, three-dimensional, and computer. Close examination of significant films combined with production of a 16mm class project.

108. 16mm Production
(4) DRISKEL
Prerequisites: Film Studies 46; and, Film Studies 104 or 107; and consent of instructor. Open to film studies majors only.

A workshop approach to the production of individual short 16mm film projects. Each student produces a double system, non-dialogue project for public screening at the end of the term. Admission to this course is determined by creative portfolio.

109AA-ZZ Special Topics in Film Production
(4) STAFF
Prerequisites: Film Studies 46 and consent of instructor.

May be repeated for credit provided letter designations are different.

Focus on one or more aspects of film production, such as music, writing, directing, design, acting, independent filmmaking, cinematography, producing. Topics will vary.

110. The Hollywood Studio
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

The effects of studio domination on American cinema and the ethos of the nation from the thirties to the sixties. Developing trends in film form and content, studio production methods, star values, and censorship are surveyed.

111. The Business of Movies
(2) STAFF
Prerequisites: Film Studies 46; and consent of instructor. Open to upper-division film majors only.

A seminar covering all phases of the contemporary film industry, including development, production, distribution, exhibition, and international and ancillary rights.

112. Lighting for the Moving Image
(4) STAFF
Prerequisites: Film Studies 104; and consent of instructor.

A workshop/seminar approach to explorations in how lighting affects the moving image, from theater to film to the computer.

113AA-ZZ. Special Topics in Film Studies
(4) STAFF
Prerequisites: Film Studies 46 or upper-division standing.

May be repeated for credit to a maximum of 12 units, but only 8 units count toward major.

Onetime course taught by lecturers or guest professors on a special area of interest to film studies. Specific course titles and topics to be announced by the Film Studies Department.

120. Japanese Cinema
(4) STAFF
Prerequisite: upper-division standing.

Same course as Japanese 159.

An introductory scrutiny of major Japanese directors: Mizoguchi, Ozu, Oshima, and Kurosawa. Close attention to their film composition, choices of subject and character, their ideas of the cinematic, and the relationship of cinema to Japanese culture and society.

121. Chinese Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

An introduction to major Chinese directors from the People's Republic of China, the Republic of China (Taiwan), and Hong Kong. Film composition, choices of subject and character, ideas of the cinematic, and relationship of cinema to Chinese culture and society.

122AA-ZZ. Topics in National Cinemas
(4) STAFF
Prerequisites: Film Studies 46 or upper-division standing.

May be repeated for credit provided the letter designations are different, but only 12 units may be applied toward the major.

This course will examine selected national cinemas (e.g., French, Italian, German, Chinese, Spanish, Japanese) in terms of major periods, themes, and formal parameters, and in relation to both national and international cultural histories.

123. German Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

The rise and fall of German cinema from 1914 to 1934, then its revival in the 1960s as the New German Cinema. Expressionism in silent film. Analysis of films by Lang, Murnau, Pabst, Weine, Wenders, Herzog, Fassbinder, etc.

125A-B. Documentary Film
(4-4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A. The history of documentary film, as an aesthetic form and a social force, from the early silent era to World War II.

B. The history of documentary film, as an aesthetic form and a social force, from World War II to the present.

128. Silent Film Comedy
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

The study of silent film comedy encompassing the work of Mack Sennett, Charlie Chaplin, Buster Keaton, Harold Lloyd, and some of their contemporaries, within the context of American culture in the teens and twenties.

130. Sound Film Comedy
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

An analysis of the comic tradition in American cinema since the coming of sound emphasizing comic-dramatic patterns, theatrical sources, historical/social contexts. Directors to be covered include: Lubitsch, Hawks, Capra, and Cukor.

132. French New Wave Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A study of the French New Wave as both an economic and aesthetic phenomenon, examining characteristic films and critical texts of the late fifties and sixties by Jean-Luc Godard, Jacques Rivette, Alain Resnais, Francois Truffaut, and Claude Chabrol, among others.

133. Soviet Cinema, 1917 to 1945
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A study of the development of cinema in Russia from the revolution to the end of World War II, with some emphasis on the relation of theory and practice and the influence of politics on art.

136. British Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Course will consider a selection of films representing the evolution of British cinema during the past half century.

137. Eastern European Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Same course as History 126F.

Focuses on cinemas of Hungary, Czechoslovakia, and Poland from their relatively modest pre-war beginnings through the post-war period of economic and political "socialization" up to the peak production of the sixties, in context of cultural and historical continuities.

138. Women and Eastern European Film: An Exploration in Second World Cinema
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Same course as Women's Studies 141.

Investigation of the role of women in Eastern European cinema both in their involvement in the industry and their portrayal on the screen in propaganda and beyond. Discussion of the cinemas of Czechoslovakia, Hungary, Poland, and the former Soviet Union.

140. The Western
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Establishes the forms and rituals of the Western genre, and reflects on changes they have undergone. Attention will also be given to the trend towards realism, and the new moral and political revisions of the Western's view of society.

142. The War Film
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A study of films depicting and/or discussing warfare from World War I to Vietnam. Special emphasis on the relationship between the periods in which the films were made and the manner in which the wars were depicted.

143. Science Fiction Film
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Examines the evolution and shifting limits of the genre from the dawn of narrative cinema through the heyday of the fifties' science fiction thriller

through the recent high-tech revival in an age of media transformation.

144. The Horror Film
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Same course as German 183.

Study of the horror film genre and the reasons for its popularity, including new interest in psychoanalysis and reaction to modern mass society and consumerism. Covers issues of sacrifice, simulated catastrophic loss, and other themes of catharsis.

145. Melodrama
(4) STAFF
Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A study of the themes, structures, style, and critical reception of film melodrama, from morality tales of the silent era through family dramas of the 1950s and 60s. Investigates issues including the representation of motherhood, family anxiety, pressures toward conformity.

146. Advanced Film Analysis
(S) STAFF
Prerequisites: Film Studies 46; 5 prior upper-division division courses in film studies; upper-division standing; open to film studies majors only.

A study of the basic formal dimensions of cinema: narration, causality, space, time, and sound.

147. The Thriller
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Study of the genre from the gangster to the science-fiction thriller, involving primarily American films but with a look at the parallel international cinema. Course centers on detection and investigation, exploring suspense and other intense forms of spectator involvement.

148AA-ZZ. Special Topics in Film Aesthetics
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

May be repeated for credit provided letter designations are different, but only 12 units may be applied toward the major.

Exploration, in detail, of a single aspect of the film experience in relation to aesthetic and analytical issues. Topics may include the sound track, camera movement, mise-en-scene, color, music, widescreen, acting, narrative, time, art design, editing.

150AA-ZZ. Topics in Film Genre
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Course may be repeated an unlimited number of times, provided the letter designations are different. However, only 12 units may count toward the major.

A study in depth of one or two film genres, including historical, theoretical, and social issues. Topics will vary.

151A. American Film: The 1930s
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A survey of major American film directors and genres, in the 1930s, within the context of social concerns.

151B. American Film: The 1940s
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A survey of major American film directors and genres, in the 1940s, within the context of social concerns.

151C. American Film: The 1950s
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A survey of major American film directors and genres, in the 1950s, within the context of social concerns.

151D. American Film: The 1960s
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A survey of major American film directors and genres, in the 1960s, within the context of social concerns.

151E. American Film: The 1970s
(4) STAFF
Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A survey of major American film directors and genres, in the 1970s, within the context of social concerns.

154. European Directors in Hollywood
(4) STAFF
Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

How the styles and themes of German emigre directors arriving in Hollywood during the twenties and thirties influenced and in turn were affected by American culture and the Hollywood studio system. Course focuses primarily on Lubitsch, Lang, and Wilder.

155AA-ZZ. Directors
(4) STAFF
Prerequisite: Film Studies 46.

Course may be repeated an unlimited number of times, provided the letter designations are different; 8 units may be counted toward the film studies major.

A study in depth of the films of one or two filmmakers of international stature and significance.

161. Third World Cinema
(4) STAFF
Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Same course as Black Studies 161.

This course studies representative films from Africa, Asia, and Latin America from the 1950s to the present. Explores the socio-cultural and aesthetic dimensions of these cinemas (which have emerged as the "other" of Hollywood and European cinema).

162. Modern Sex and Modern Love
(4) PENLEY
Same course as Women's Studies 150. May be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major.

Examination of how the media reflect and shape ideas of and about contemporary feminism. In an effort to be topical, subjects covered consist of contemporary feminist issues featured in the media during the quarter.

163. Women and Film: Feminist Perspectives
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Survey of the major debates on questions of women and representation in contemporary film criticism. Topics to be covered include the representation of sexuality and the family in the Hollywood cinema; feminism and the avant-garde.

165. Film and Social Reality
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

An inquiry into the interrelationships between film and history and/or film and ideology. The course examines how cinema reflects and/or influences the attitudes of a society.

169. Film Noir
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Study of the conventional themes, structures, and visual motifs of the detective film. American films of the forties and fifties and contemporary American and European works will be considered.

170. The Musical Film
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Examination of musical films from the advent of talkies to the present, with special attention given to formal issues: the relationship of musical spectacle to narrative, conditions of musical film spectatorship, musical utopias as constructed in film space and time.

175. Experimental Film
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

A survey of the experimental film tracing the major stylistic and thematic trends in the diverse movements that have considered themselves outside of the commercial narrative cinema. Bunuel, Dulac, Cocteau, Leger, Deren, Brakhage, Baillie, Frampton, Snow, Rainer, and others.

178Z. Technology and Cinema
(4) STAFF
Same course as French 178Z.

Cinema fulfills and breaks down the technological project of "framing" the whole existence. Themes: humanity and/as technological threat, the decline of language and ethics, the culture industry, science fiction. Screenings include Tarkovsky, Kubrick, Star Wars, Marker, Godard, Méliès, Lang. Lectures and readings in English.

180. Television History
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Survey of the history of television from 1945 to the present. Analysis of this 50-year-old important cultural institution to help students understand the interconnected relationships between programming, industry, audiences, social contexts, and technology.

184. Film Music
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

Examines the musical score as an integral structural element of cinema. Topics include the model of "silent" cinema; the theoretical basis of sound and image synchronicity; the narrative functions of film music; and contemporary development of the film score.

187AA-ZZ. Topics in Film Analysis
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing.

May be repeated for credit to a maximum of 12 units provided letter designations are different, but only 8 units may be applied toward the major.

A seminar for advanced students examining in-depth a particular problem or issue in the analysis of film and its consequences for a history, theory, or aesthetics of film.

188A. Basic Screenwriting
(4) STAFF
Prerequisites: upper-division standing; consent of instructor.

Students are required to submit a writing sample.

A study of the creativity and the technique of screenwriting for the conventional narrative film and for TV. Students will be required to complete writing exercises, a treatment, and master scenes of a full-length project.

188B. Advanced Screenwriting
(4) STAFF
Prerequisite: Film Studies 188A.

May be repeated for credit to a maximum of 8 units.

A course intended for students who have successfully completed Film Studies 188A and have a full-length screenplay in process which they want to complete.

188C. Writing Short Films
(4) STAFF
Prerequisites: upper-division standing; consent of instructor.

Students are required to submit a writing sample.

An introduction to screenwriting, emphasizing the fundamentals of short film and t.v.: setup, climax and resolution, "character-driven" story and plot, the

role of conflict, principles of action, exposition, and premise. Students are required to write two short films.

188D. Master Class in Writing: Telling the Story
(4) STAFF
Prerequisites: upper-division standing; consent of instructor.
Students are required to submit a writing sample.
With the help of successful screenwriters and novelists, exploration of the elements that make up a well-told story. Students complete writing assignments in their own chosen form.

188TV. Writing for Television
(4) STAFF
Prerequisites: consent of instructor, a writing sample, and upper-division standing.
Students are required to submit a writing sample.
Introduction to fundamentals of writing for television including: the situation comedy, the hour-long drama, the MOW, the miniseries, and children's programming. Investigation of the practical and creative tools necessary for navigating successful television scripts.

189AA-ZZ. Topics in Contemporary Film Theory
(4) STAFF
Prerequisites: Film Studies 146 and 192A and consent of instructor.
May be repeated for credit to a maximum of 12 units provided letter designations are different, but only 8 units may be applied toward the major.
Topics vary each year and may include such problems as the relation of film to structuralism, semiotics, metaphor/metonymy, point of view, and the writings of Burch, Barthes, Metz, Heath, Bordwell, Willemen, Wollen.

190AA-ZZ. Studies in Film and the Other Arts
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing; and consent of instructor.
May be repeated for credit to a maximum of 12 units provided letter designations are different, but only 8 units may be applied toward the major.
An analysis of film in relation to literary and plastic arts such as photography, architecture, and the novel. Topics will vary.

191. Film Criticism
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing; and consent of instructor.
An intensive study in the reading and writing of film criticism. A close examination of critical texts from different periods is accompanied by the screening of relevant films; further emphasis is given to analyzing critical papers written for the seminar.

192A. Classical Film Theory
(4) STAFF
Prerequisites: Film Studies 146; and upper-division standing.
Not open for credit to students who have completed Film Studies 192.
An introduction to classical film theory through a close analysis of selected writings of such theorists as Munsterberg, Arnhein, Eisenstein, Bazin, Mitry, Metz, Burch, Baudry, and Heath.

192B. Contemporary Film and Media Theory
(4) STAFF
Prerequisite: Film Studies 46.
A survey of the contribution of contemporary critical theory to the study of film and media. Special emphasis on cultural studies approaches to understanding film as popular culture.

193. Film Narrative
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing; and consent of instructor.
An investigation of major aesthetic and theoretical problems concerning film narrative. The classic film, the breakdown of classical conventions, and the modernistic film are covered.'

194. Advanced Readings
(4) STAFF
Prerequisite: Film Studies 46 or upper-division standing; and consent of instructor.
May be repeated for credit to a maximum of 12 units.
Advanced readings in specific film genres, directors, or historical periods.

195I. Internship in Film/Television
(2) STAFF
Prerequsites: upper-division standing; consent of department. Open to film studies majors only.
Students must have a minimum 3.0 grade point average for the preceding three quarters.
An opportunity for training, career sampling, and contacts in the film or television industry. Required are approximately 100 hours of work a quarter, a final five-page report, and a supervisor's letter of verification.

196. Senior Honors Seminar
(4) STAFF
Prerequisite: admission to senior honors program (see requirements under Film Studies Honors Program).
A one-quarter directed study, to be conducted as outlined in the description of the Senior Honors Program. Honors candidates will write a senior thesis on a topic approved by film studies faculty.

199. Independent Studies
(1-4) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in film studies; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters.and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Selected research under the direction of a faculty member.

199RA. Independent Research Assistance in Film Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in film studies; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

200. Theories of Popular Culture
(4) PENLEY
Contemporary approaches to the study of popular culture. Key terms are "agency," "hegemony," "containment," and "resistance." Key topics will include intellectuals in popular culture and the current state of "cultural war" in the United States.

201. Film and Ethnography: Critical Perspectives
(4) WALKER
This course brings a film studies perspective to bear on a selection of writings by visual anthropologists and on a selection of films that could be construed as "ethnographic." Issues at stake include self-reflexivity, domestic ethnography, and transnational documentary.

596AA-ZZ. Directed Reading and Research
(1-6) STAFF
Prerequisite: graduate standing and consent of instructor.
Individual tutorial.

French and Italian

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Department Chair: vacant

Faculty

William J. Ashby, Ph.D., University of Michigan, Professor (linguistics)

Cynthia Brown, Ph.D., UC Berkeley, Professor (late medieval-early Renaissance literature)

Jean-Jacques Courtine, Doctorat d'Etat de Linguistique, Université de Paris X, Professor (linguistics and cultural studies)

Angela Ellis, Laurea, University of Bologna, Lecturer

Jody Enders, Ph.D., University of Pennsylvania, Professor (medieval literature, rhetoric)

Sydney Lévy, Ph.D., UC Irvine, Professor (contemporary French poetry, literary theory)

Elizabeth MacArthur, Ph.D., Princeton University, Associate Professor (18th-century literature)

Didier Maleuvre, Ph.D., Yale University, Associate Professor (19th-century literature)

Catherine Nesci, Ph.D., University of Paris, Agrégation, École Normale Supérieure, Associate Professor (19th-century literature, Balzac, theory)

Eric Prieto, Ph.D., New York University, Assistant Professor (20th-century literature)

Cynthia Skenazi, Ph.D., University of Michigan, Associate Professor (16th-century literature)

Iris Smorodinsky, Ph.D., Yale University, Lecturer with Potential Security of Employment (supervisor of teaching assistants)

Jon R. Snyder, Ph.D., Yale University, Associate Professor (Italian Renaissance literature, comparative literature)

Ernest Sturm, LL.B., New York University School of Law; Ph.D., Columbia University, Professor (literature and philosophy)

Ronald W. Tobin, Ph.D., Princeton University, Professor (17th-century French theatre, Molière)

Laura Wittman, Ph.D., Yale University, Assistant Professor (Italian studies)

Emeriti Faculty

Alfredo A. Bonadeo, Ph.D., UC Berkeley, Professor Emeritus (Italian literature)

Anne G. Cushing, Ph.D., University of Colorado, Professor Emerita (20th-century poetry)

Naomi Greene, Ph.D., New York University, Professor Emerita (20th-century literature, film, Artaud)

Harry Lawton, M.A., B. Litt., Oxford University, Senior Lecturer with Security of Employment Emeritus (Italian literature, film)

André Malécot, Ph.D., University of Pennsylvania, Professor Emeritus (phonetics)

Edmond E. Masson, Ph.D., UC Berkeley, Professor Emeritus (French literature)

Jack Murray, Ph.D., Yale University, Professor Emeritus (20th-century literature)

Patrizio Rossi, Ph.D., UC Berkeley, Professor Emeritus (20th-century literature, film)

Jacqueline Simons, Diplôme d'Etudes Supérieures, Senior Lecturer with Security of Employment Emerita (pedagogy)

Mark J. Temmer, Ph.D., Yale University, Professor Emeritus (18th-century literature)

Philip D. Walker, Ph.D., Yale University, Professor Emeritus (19th-century literature)

One studies a foreign language and its literature in order to gain insight into another culture and another time. This enables us to see our own culture and era in a broader perspective, and helps us discern what is universal and timeless, and what is local and relative. *"Plus ça change, plus c'est la même chose"*—"The more things change, the more they are the same"—is an old French saying. It is only by reading the great literature from different times and places that we slowly grasp that human nature is the same today as it was when Machiavelli wrote *The Prince*, when Montaigne wrote his *Essays*, when La Fontaine wrote his *Fables*. On the other hand, it is by reading literature from other eras—from the Italian Renaissance, from the French Enlightenment, and from our own century—that we begin to understand that certain "styles" of thinking and behavior come and go; that what shocked one era is acceptable in another, and vice-versa. Such insight inevitably leads us to wonder how future generations may judge our own era, and thus can be a first step in bringing about change. Ultimately, the study of a foreign language and its literature leads to a richer understanding of our place in the world and in history.

The Department of French and Italian offers the bachelor of arts in French and in Italian cultural studies. There are also minors in French and Italian. The graduate program in French offers the M.A. in French literature or French linguistics, and the Ph.D. in French literature. In addition, the department collaborates with the Comparative Literature Program, the Film Studies Program, the Medieval Studies Program, and the Renaissance Studies Program.

The junior year abroad. The opportunity to live and study in France or Italy for a year is something to be remembered for a lifetime. It is one thing to visit a country as a tourist, and quite another to live among French or Italian people, attend a French or Italian university, and to become immersed in either of these cultures. One's perspective on the world is never quite the same again. The Education Abroad Program sends French majors to the universities of Bordeaux, Grenoble, Lyon, and Toulouse, with a limited number going to the Paris Center for Critical Studies. Qualifying Italian cultural studies majors are sent to the universities of Padua, Venice, and Bologna; a few art students may pursue special academic programs at the Venice Academy of Fine Arts or the Venice Institute of Architecture. Italian senior honors students may apply to attend the Scuola Normale Superiore in Pisa (medieval and Renaissance studies), or to spend a semester at Bocconi University in Milan (economics, international business). Education Abroad participants pay the same fees they would pay at UCSB, as well as room, board, books and personal travel and living expenses. Majors who go to France under the Education Abroad Program must complete at least 18 units of upper-division courses in the department on the UCSB campus. Full details regarding EAP courses and regulations are available from the EAP office or the department chair. For more information, contact the EAP Office, 1231 Girvetz Hall (telephone: 893-2958).

Le Club Français and Club Italiano. These clubs meet twice a month for ethnic food, films, conversation, and general fun, under the leadership of visiting French students and native Italian speakers. All levels of fluency are welcome. For details, contact the department.

Awards and Honors

Pi Delta Phi is a nationwide French honor society. Juniors and seniors with a 3.5 GPA in French and a 3.23 grade-point average overall will be invited to join, as will qualifying graduate students. The annual Pi Delta Phi banquet is held in May. In addition, French and Italian cultural studies majors of senior standing may be invited to participate in the senior honors program. This entails writing a 20-page paper as an independent study project (up to 4 units course credit). Those who successfully complete this project will graduate with honors; their diplomas and transcripts will read "Distinction in the Major." In addition, French senior honors students may submit their essays for consideration for the Hermione Chevalier Prize, a modest cash award that is given at the Pi Delta Phi banquet.

Graduate students in French will be considered for the Pierre and Geneviève Delattre Memorial Fellowship, an award of approximately $1,000, given annually on the basis of merit and need.

Senior Honors Program

French majors or Italian cultural studies majors of senior standing may be invited to participate in the departmental honors program. Details are available from the department office.

Undergraduate Program

Bachelor of Arts—French

The French major introduces students to France's rich literary and cultural heritage, from medieval epics to twentieth-century writings on World War II and the Nazi Occupation, and its legacy in the French collective consciousness. In addition, courses in Old French and in linguistics heighten students' awareness of how language changes over time, and how it is a living reflection of diverse cultural influences. In reading the works of such literary giants as Christine de Pizan, Rabelais, Molière, Voltaire,

Eric Prieto

ASSISTANT PROFESSOR, FRENCH & ITALIAN

It was Eric Prieto's fascination with French culture, sparked by his first trip to Paris, that led him to his current position in the Department of French and Italian. He teaches courses in French literature and in the French-language literatures of Africa and the Caribbean.

"I want students to use this knowledge to gain new perspectives on their own culture."

In the classroom, Prieto's first objective is to help students gain familiarity with the culture they're studying. "But beyond this," he adds, "I want students to use this knowledge to gain new perspectives on their own culture. I try to get them to explore the different points of view we run across and experiment with applying them to situations here at home."

Prieto's classes are usually small, with an average of fifteen or twenty students. Some are taught entirely in French, and others, such as the African and Caribbean courses, are taught in translation. "Much of class time is taken up by discussion," he says. "Rather than lecturing all the time, I try to create a space where students can think independently, explore new ideas, and help each other to learn."

Rousseau, Balzac, Sand, Zola, Proust, Camus, Beauvoir, and Sartre, students will come to realize that although human technology has changed greatly in the last 500 years, human nature has not. These men and women still have important insights and urgent messages for us today. Students who major in French are well-equipped to pursue careers in publishing, research, teaching, the arts, or any field that draws upon a rich liberal education.

Preparation for the major. Required: French 1, 2, 3, 4, 5, 6, 26. History 4A-B-C, French 40AX-BX-CX, and Philosophy 20A-B-C are strongly recommended. French majors must maintain at least an average grade of C in French courses taken prior to the junior year; transfer students may be required to take an examination.

Upper-division major. Forty-four upper-division units in French, including (1) 8 units from advanced language (104A-B) or French linguistics (102, 103, 105, 107, 115, 116, 117A-B-C); (2) French 101 (prerequisite for upper-division literature courses); (3) 8 units of upper-division literature taught in French, divided among two of the following time periods: (a) medieval, Renaissance, seventeenth century and (b) eighteenth, nineteenth, or twentieth century; (4) 8 units of cultural courses, from the series 106A-B-C-D-E; (5) 12 units of additional upper-division courses in the department or in comparative literature, provided that the course is taught by faculty from the Department of French and Italian, with a maximum of 8 units coming from courses taught in English or Italian; (6) 4 units from French 197 (senior seminar) or from French 110 (Senior Honors Seminar) if the student qualifies.

Bachelor of Arts—Italian Cultural Studies

The Italian cultural studies major is interdisciplinary. Perspectives from a broad spectrum of disciplines such as history, literary theory, sociology, gender and ethnic studies, film studies, and philosophy allow each student to explore the extraordinary resonances of Italian culture in a global context. The major includes electives from art history, film studies, geography, history, music, and political science, in addition to the core curriculum in Italian. The requirements for the major may be filled in a variety of ways and with a greater or lesser degree of specialization, depending upon the individual student's preferences and background. Students in this major who plan to enroll in graduate programs should consult an advisor.

Students are strongly encouraged to participate in the Education Abroad Program in Italy. EAP offers a one-quarter program in Siena, a semester program in Venice and Siena, and year-long programs in Bologna, Venice, and Padua. Special arrangements are available for qualified students wishing to study at the Venice Institute of Architecture or the Bologna Academy of Fine Arts. Senior honors students may apply to attend the Scuola Normale Superiore in Pisa or the Bocconi University in Milan (for economics and international business). Students may satisfy up to one-half of the requirements for the major while studying abroad for a year in Italy, or two-fifths of the requirements for the minor. Advanced courses taken in Siena during the spring program may, with the consent of the director of undergraduate studies, be counted toward the major or the minor. All Education Abroad Program participants should determine credit and unit limitations for their proposed work in Italy, in advance, with the director of undergraduate studies.

Students who complete the major in Italian cultural studies may enter a variety of careers and graduate programs including law, education, government service, international trade and finance, travel, communications and publishing. It is important to keep in mind that many of these professional careers require training beyond the undergraduate level, and students with such interests should discuss their plans with an advisor as early as possible.

Staff members are available in the department office during working hours to answer questions about the major and other academic matters. Students may also consult detailed descriptions of current course offerings in the department office. The director of undergraduate studies keeps posted office hours and is also available by appointment or via e-mail.

Preparation for the major. Italian 1, 2, 3, 4, 5, 6 or equivalent. History 4A-B-C and Philosophy 21A-B-C are strongly recommended.

Upper-division major. Forty upper-division units are required, including Italian 101 and 102; 8 units of Italian literature taught in Italian from any periods; 114X; 4 units from an additional Italian literature course (may be in English); 16 units of electives from the following: Art History 105E-F-G-H, 105K-L, 105N, 109A-B-C-D-E, 110AA-ZZ, 113A-B-C-D, 184A-B; Comparative Literature 128, 129; Film Studies 101C, 155; Geography 159; History 115, 117A, 121A-B, 123A-B-C, 129A-B-C-D-E-F; any upper-division Italian course; Music 112A-B-C, 177, 179, 180, 181. (No more than two courses may be from each discipline, except Italian.) Double majors may use 8 units in both majors.

Minor—French

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in French and those offered by other departments and applied to the minor.

Preparation for the minor. French 1, 2, 3, 4, 5, 6 or equivalent (0-24 units); French 26. Recommended electives: French 40AX-BX-CX.

Upper-division minor. Twenty units, distributed as follows:

A. One course (4 units) from French 106A-B-C-D-E.

B. Sixteen units of French electives from courses in French culture, linguistics, or literature or in comparative literature, provided that the course is taught by faculty from the Department of French and Italian, with no more than 4 units coming from the French 106 series. A maximum of 4 units may come from courses taught in English.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Italian Cultural Studies

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in Italian cultural studies and those offered by other departments and applied to the minor.

Preparation for the minor. Italian 1, 2, 3, 4, 5, 6, or equivalent (0-24 units).

Upper-division minor. Twenty units, distributed as follows: Italian 101 (4 units); two upper-division literature courses taught in Italian (8 units); two additional upper-division Italian courses (8 units; which may include courses taught in English) or courses from the following: Art History 105E-F-G-H, 105K-L, 105N; 109A-B-C-D-E, 110AA-ZZ, 113A-B-C-D, 184A-B; Comparative Literature 128, 129; Film Studies 101C, 155; Geography 159; History 115, 117A, 121A-B-C, 123A-B-C, 129A-B-C-D-E-F; Music 112A-B-C, 177, 179, 180, 181. (No more than one course may be from each discipline, except Italian.)

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB," including the mandatory Graduate Record Examination (GRE).

Master of Arts—French

Admission

Applicants must have the B.A. in French or comparative literature or its equivalent from an accredited institution by the projected quarter of admission. The admissions committee considers transcripts, letters of recommendation, GRE scores, the statement of purpose, the writing sample, and the tape recording of spoken French (or the TOEFL, where applicable) in making admissions decisions.

Degree Requirements

The student must take 44 units of graduate-level coursework. Details on distribution requirements are available in the department's *Graduate Student Handbook*. A third language in addition to French and English is required. All M.A. candidates must pass written examinations and an oral examination in French and must serve as teaching assistants for at least two quarters. Continuation to the Ph.D. program upon completion of the M.A. is by no means automatic, as described below.

Doctor of Philosophy—French

Admission

Although students admitted to the department's M.A. program in French are conditionally admitted to the Ph.D. program as well,

continuation to the Ph.D. program is by invitation only and is based upon performance in M.A. coursework, on the M.A. exams, and as a teaching assistant.

For those applying to the Ph.D. program from another institution, the M.A. in French or its equivalent is required. The admissions committee considers transcripts, letters of recommendation, GRE scores, the statement of purpose, the writing sample and the tape recording of spoken French (or the TOEFL, where applicable) in making admissions decisions.

Students entering the Ph.D. program with an M.A. from another institution must pass a pre-qualifying examination at the end of their first year at UCSB in order to continue in the program.

Degree Requirements

Students who earned the M.A. at UCSB must complete an additional 24 units of seminar work, which includes a course in literary theory. Students with the M.A. from another institution must pass 48 units of seminar work at UCSB, and must have had two courses in literary theory. All doctoral students must have a reading knowledge of two foreign languages in addition to English and French, and must serve as teaching assistants for three quarters.

All students must pass a series of written examinations; the examinations may be written in French or English. Students who successfully pass the written examinations must pass an oral qualifying examination in order to advance to candidacy. Following formal advancement to candidacy, the student must present a dissertation which gives evidence of ability to conduct independent research of high quality.

Full details of the Ph.D. program, including options for the examinations and examination schedules, are available from the department.

Optional Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Summer Institute of French Studies

A three-summer intensive program leading to the M.A. degree in French is designed primarily for secondary school teachers of French. Residence at the institute and observance of a "no English" rule are required.

In addition to Summer French Institute requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB," including the mandatory Graduate Record Examination (GRE).

In addition to Summer French Institute requirements for the M.A. in French, degree candidates must fulfill the university degree requirements described in the chapter "Graduate Education at UCSB."

Prerequisites. The student must have an undergraduate major in French or its equivalent and must demonstrate proficiency in speaking and writing French.

Coursework. The M.A. requires 40 units or ten courses across five areas including language, linguistics, culture, literature, and interdisciplinary studies. Students may elect to write a thesis, but this is optional.

Since this is not a research-oriented degree, the Summer Institute M.A. will not completely fulfill requirements for entry into the Ph.D. program at UCSB.

Recommended preliminary readings. Students can do the reading for many courses during the winter; lists appear in the winter bulletin, published in the fall and available upon request.

For additional information and application forms, write to the Summer Sessions Office, University of California, Santa Barbara, CA 93106.

French Courses

LOWER DIVISION

Please note: Students who have studied French at other institutions and wish to continue their study at UCSB are required to take the placement examination given by the department.

1. Elementary French
(4) STAFF
The beginning course in French. Course taught in French. Oral skills stressed. Grammar reinforced by dialogue memorization and pattern drills. Correct pronunciation and the ability to distinguish sounds emphasized. Question-answer technique helps students transfer patterns to free conversation. Laboratory assignment given daily. Not taught in spring quarter. (F,W)

2. Elementary French
(4) STAFF
Prerequisite: French 1.
A continuation of French 1. Course taught in French. Readings, essays, French geography included, the latter by means of slides. Laboratory assignment given daily. (F,W,S)

3. Elementary French
(4) STAFF
Prerequisite: French 2.
A continuation of French 2. Course taught in French. Emphasis on readings and short essays rather than on dialogues. Slide programs given to encourage class discussion. Laboratory assignment given daily. (F,W,S)

4. Intermediate French
(4) STAFF
Prerequisite: French 3.
Taught in French, the course reviews basic structures with new elements added. Vocabulary development stressed by means of original sentences and weekly essays. Reading selections to help develop oral-written correspondences included in the course. Laboratory assignment given daily. (F,W,S)

5. Intermediate French
(4) STAFF
Prerequisite: French 4.
A continuation of French 4. Course taught in French. Basic structures reviewed. Supplementary readings such as *L'Etranger, Huis Clos,* etc., are emphasized. Laboratory assignment given daily. (F,W,S)

6. Intermediate French
(4) STAFF
Prerequisite: French 5.
A basic text, used for the acquisition of vocabulary and the practice of essay writing, also stresses aspects of civilization and is complemented by readings of poems, plays, or novels. (F,W,S)

8A. French Conversation
(2) STAFF
Prerequisite: French 3.
Brief exposés are based on centers of vocabulary which have been studied. Debates and discussion on topics given by the instructor are held between the students. (F,W,S)

8B. French Conversation
(2) STAFF
Prerequisite: French 4.
Brief exposés are based on centers of vocabulary which have been studied. Debates and discussion topics given by the instructor are held between students. (F,W,S)

8C. French Conversation
(2) STAFF
Prerequisite: French 5.
This course, because of the abilities of the students, varies more in content than does French 8A or 8B. Discussion of relevant topics is carried on, while fluency and vocabulary enrichment are definitely emphasized. (F,W,S)

10V. Intensive French for Musicians
(4) STAFF
Comprehensive course designed to familiarize musicians with basic French grammar, culture, musical terminology, situational language usage as well as French prose and lyrics as applied to vocal literature. Emphasis on oral skills. For advanced singers/musicians. In French.

11A-B. French for Graduate Students
(4-4) STAFF
Prerequisite: French 11A for French 11B.
A service course for graduate students from other departments who need to satisfy language requirements. Divided into two levels: 11A (Elementary) for those who have no, or hardly any knowledge of French; 11B (Intermediate) open to students who have an appropriate level of knowledge of the language and to continuing students from 11A. Class offers grammatical preparation and practice for translation, but no individual projects.

12. Intensive Elementary French
(8) STAFF
Not open for credit to students who have completed French 1 or 2.
Course covers material in French 1 and 2 in one quarter.

13. Intensive Elementary-Intermediate French
(8) STAFF
Prerequisites: French 1 and 2; or French 12.
Not open for credit to students who have completed French 3 or 4.
Course covers material taught in French 3 and 4 in one quarter.

14. Intensive Intermediate French
(8) STAFF

Prerequisites: French 3 and 4; or French 13.

Not open for credit to students who have completed French 5 or 6.

Course covers material taught in French 5 and 6 in one quarter.

15A. Semi-Intensive Elementary French
(6) STAFF

Covers material from French 1 and half of French 2 in one quarter.

15B. Semi-Intensive Elementary French
(6) STAFF

Prerequisite: French 15A.

Course covers material from second half of French 2, plus French 3, in one quarter.

19A-B-C. Intensive Practice in Spoken French
(4-4-4) STAFF

Prerequisite: French 6 or 8C.

An intensive encounter with spoken French designed to develop communication skills. Systematic assimilation of oral structures through the study of film, soundtracks, and tapes. Exercises in oral expression. Active expansion of vocabulary and means of expression.

26. Composition
(4) STAFF

Prerequisite: French 6.

Not open for credit to students who have completed French 26A.

A course to develop writing skills in French. Polish skills in composition, grammar, and argumentation.

40AX-BX-CX. Law, Culture and the Arts
(4-4-4) BROWN, ENDERS, MACARTHUR, MALEUVRE, NESCI

From the foundations of legal thought, to "courtroom dramas" in film, literature, and art, to the contemporary debates about the influence of the media on "real life," this course explores the alliances and tensions between the law and artistic activity. In English.

40AH-BH-CH. Law, Culture and the Arts Honors
(1-1-1) BROWN, ENDERS, MACARTHUR, NESCI

Prerequisite: concurrent enrollment in French 40AX, BX, or CX; and consent of instructor. Honors students only.

Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor.

66X. Laughter
(4) PRIETO

Why do we laugh? What makes a joke funny? This course attempts to answer these questions by readings of a number of modern French comic texts in the light of major theories of laughter. (Spencer, Bergson, Freud). In English.

67X. Censorship and the Power of Art
(4) MACARTHUR

Study of representative contemporary debates over censorship (popular music, visual arts, etc.), followed by celebrated examples from the history of French literature (Sade, Baudelaire). Emphasis on what censorship debates imply about the power of art over individuals or societies. In English.

68X. Adultery in French Literature
(4) MACARTHUR

Representations of adultery from the Middle Ages to the present, including such works as *Tristan and Iseut*, *The Princess of Clèves*, and *Madame Bovary*. Changing conceptions of love, the social function of marriage, psychological and political significance of adultery. In English.

70X. French Culture and Institutions
(4) STAFF

The course will address broad issues in French culture and institutions throughout the centuries, using a variety of perspectives and issues. In English.

70Y. France: Historic Sites and Symbols
(4) STAFF

The course will focus on the way cultural and historical memories are embodied in places, monuments, institutions, and symbols. In English.

70Z. French History in Film and Literature
(4) STAFF

The course will focus on various representations and iconography (of Paris, of the French Revolution) presented in literature and film. In English.

UPPER DIVISION

French 26 or consent of instructor is prerequisite to all upper-division courses taught in French, unless otherwise noted.

Courses whose numbers are followed by X, Y, Z are taught in English.

101. Introduction to Literary and Cultural Analysis
(4) STAFF

A continuation of French 26. Introduction to techniques of literary and cultural analysis. Continued practice in writing. Will prepare students for upper-division courses in both literature and cultural studies. In French.

102. Background of Modern French
(4) ASHBY

The origins of the French language and an overview of its linguistic development with emphasis on the historical and cultural background. In French.

103. Phonetics and Phonology
(4) ASHBY, SMORODINSKY

Basic concepts of articulatory phonetics and French phonology. A required one-hour session per week is scheduled in the Language Laboratory. Student performance is monitored by the instructor or teaching assistant.

104A. Advanced Composition, Creative Writing and Translation
(4) STAFF

Writing course focusing on grammar, clarity, style and original expression in French.

104B. Writing the Self
(4) STAFF

Readings in twentieth-century autobiography serving as models for creative writing. Coursework involves analysis of literary works and a long-term "autobiographical project" that may be factual or fictionalized. In French.

105. French Morphology and Syntax
(4) ASHBY

Prerequisite: Linguistics 20 or French 102.

An analysis of the morphology and syntax of modern French.

106A. History of French Culture
(4) ENDERS, BROWN

Cultural, literary, and artistic perspectives on four important historical moments: feudal society, the rise of the bourgeoisie, the Renaissance, and the Reformation. In French.

106B. History of French Culture
(4) MACARTHUR

Important social and cultural changes during the seventeenth and eighteenth centuries. In French.

106C. History of French Culture
(4) NESCI, PRIETO

Modernity as cultural phenomenon in the context of political and social changes from 1789 to 1940. Focus on the advent and crisis of democracy, the development of industrial capitalism and mass culture, the making of a national and historical consciousness. In French.

106D. La France Depuis 1945: Mutations Sociales et Culturelles
(4) COURTNE

The transformation of French society since World War II, with focus on attitudes and daily life. The role of women, love and marriage, birth and abortion, parents and children, leisure activities, culture, consumerism. In French.

106E. French Popular Culture
(4) PRIETO

Examination of contemporary civilization in France through the study of documents of everyday life and artifacts of popular culture, including literature, film, music, and of course, the *BD* (comic book). In French.

106X. Women in France: Images and Realities (in English)
(4) BROWN

The comparison and contrast of the image of women in the arts and literature with their traditional position in French society from the Middle Ages to the present. Representative figures include Eleanor of Aquitaine, George Sand, and Simone de Beauvoir. In English.

107AA-ZZ. Problems in French Linguistics
(4) ASHBY, SMORODINSKY

Prerequisite: upper-division standing; Linguistics 20 or French 102 or 103 or 105 or 111.

A few selected problems in the linguistic analysis of French will be studied in depth. The specialized focus will change from year to year. In French.

110. Senior Honors Seminar
(4) STAFF

Prerequisite: honors standing.

Rigorous investigation of theoretical issues through the reading of both literary and critical texts. Course material will vary from year to year. In French.

111. Saussure et Les Origines de la Linguistique Française
(4) STAFF

Prerequisite: French 26.

Focus on Saussure's landmark work, ***Cours de Linguistique Générale***, and the concepts it defines: système, langue et parole, synchronie et diachronie, valeur et signification, semiologie. Subsequent theories, including those of enunciation, are discussed.

112. Linguistique Structurale et Analyse des Textes
(4) STAFF

Prerequisite: French 111.

The founding principles of structural linguistics, and how linguistic methods can be applied to the analysis of literary texts (Barthes, Greimas), folktales (Propp), myths or genealogies (Levi-Strauss), semiology (Barthes, Prieto), and psychoanalysis (Lacan).

113. Discourse and the Body: Foucault in France and the United States
(4) STAFF

Prerequisite: French 26.

Focusing on theoretical works of Michel Foucault in their historical context, exploration of the sometimes contradictory readings of French post-structuralism in France and America.

113X. Discourse and the Body: Foucault in France and the United States
(4) STAFF

Prerequisites: English 2 and 3.

Focusing on the critical works of Michel Foucault in their historical context, the course will explore the sometimes contradictory readings of French post-structuralism in France and America. Taught in English.

114. Techniques of Literary Analysis
(4) STAFF

Prerequisites: French 26 and 101.

Approaches to the three main literary genres (poetry, novel, and theater) based on close textual analysis, readings in theory, and research methods. For advanced undergraduates and beginning graduate students. In French.

115. Language and Culture in the French-Speaking World
(4) ASHBY

The French language in its cultural and social contexts. Topics include language planning; sociolinguistic and regional variation; minority languages in France; French in Canada, Louisiana, Africa, and the Caribbean; language and gender; the creation of new technical words; spelling reform. In French.

116. Everyday French
(4) ASHBY

The linguistic norm, as described in normative grammar and as taught in the schools, compared to everyday speech. Topics include linguistic variation in phonology, syntax, and lexicon conditioned by social class, age, sex, region, and register. In French.

117A-B-C. French Business Culture: A Practical Approach
(4-4-4) STAFF

A practical approach to the culture, economy, and commerce of modern-day France. Its relations with its European partners. Development of the necessary language skills. In French.

120X. Autobiography
(4) MACARTHUR

A study of autobiographies written in French from the eighteenth century to the present, including Rousseau, Chateaubriand, Sand, Leduc, and Sartre. Readings will vary from quarter to quarter. In English.

121. La Vie Privée en France, XVI-XVIII Siècles
(4) STAFF

Prerequisite: French 26.

How did French people live in earlier times? What were the relations between men and women, parents and children? What were attitudes towards birth, love, marriage, or death? We will seek answers in historical and contemporary texts.

121X. Private Life in France in the Sixteenth through Eighteenth Centuries
(4) STAFF

Prerequisites: English 2 and 3.

How did French people live in earlier times? What were the relations between men and women, parents and children? What were attitudes towards birth, love, marriage, or death? We will seek answers in historical and contemporary texts. Taught in English.

122. The Holocaust in France
(4) COURTINE

World War II left emotional scars on France that still have not healed. Examination of events and themes that still haunt the French: collaboration with the German occupiers, participation in the deportation of Jews, and the Resistance movement. In French.

122X. The Holocaust in France
(4) COURTINE

World War II left emotional scars on France that still have not healed. We will examine events and themes that still haunt the French: collaboration with the German occupiers, participation in the deportation of Jews, and the Resistance movement. In English.

129. Medieval Urban Legends
(4) ENDERS, BROWN

Prerequisites: French 26 and 101.

Spanning history, fiction, theology, folklore, and popular culture, urban legends remain an intriguing and enduring tradition. We explore and interpret French medieval legends (e.g., monsters and "snuff" drama) which reveal some surprising connections with their modern counterparts. In French.

129X. Medieval Urban Legends
(4) ENDERS, BROWN

Prerequisites: French 26 and 101.

Spanning history, fiction, theology, folklore, and popular culture, urban legends remain an intriguing and enduring tradition. We explore and interpret French medieval legends (e.g., monsters and "snuff" drama) which reveal some surprising connections with their modern counterparts. In English.

130X. Prosecution and Persecution in the Middle Ages
(4) ENDERS, BROWN

Legal and cultural perspectives on transgression in France in the Middle Ages, An examination of representative historical and literary treatments of such subjects as witchcraft, heresy, rape, treason, homosexuality, and "minorities." In English.

131. Performing Gender in the Middle Ages
(4) ENDERS, BROWN

Cultural and literary portrayals of the connection between gender and social roles in France in the Middle Ages. Readings focus on early conceptualizations of physiognomy, medicine, marriage, power, sainthood, transvestism, the idealization of women, and misogyny. In French.

131X. Performing Gender in the Middle Ages
(4) ENDERS, BROWN

Cultural and literary portrayals of the connection between gender and social roles in France in the Middle Ages. Readings focus on early conceptualizations of physiognomy, medicine, marriage, power, sainthood, transvestism, the idealization of women, and misogyny. In English.

132X. Women on Trial
(4) ENDERS, BROWN

A study of the cultural construction of femininity through an examination of legal proceedings (actual and literary) in France initiated by or against medieval women for such "crimes" as witchcraft, adultery, pride, theft, vainglory, and seduction. In English.

133. Words and Music in the Middle Ages
(4) ENDERS, BROWN

Prerequisites: French 26 and 101.

A study of major medieval performance genres in their sociocultural context, including the *troubadours* and *trouvères*, the Mass and liturgical drama, extant instrumental music, and romance works with lyric insertions (e.g., *Aucassin et Nicolette*, Machaut). In French.

133X. Words and Music in the Middle Ages
(4) ENDERS, BROWN

Not open for credit to students who have completed French 133.

A study of the major medieval performance genres in their sociocultural context, including the *troubadours* and *trouvères*, The Mass and liturgical drama, extant instrumental music, and romance works with lyric insertions (e.g. *Aucassin et Nicolette*, Machaut). In English.

134AX. Law and Literature in the Middle Ages
(4) ENDERS, BROWN

Prerequisite: upper-division standing.

Not only does medieval literature represent and stage constant juridical proceedings (trials, ordeals, executions): law itself is often perceived as entertainment. Analyzing representative epic, theatrical, and legal texts, we will investigate the veritable spectacle of jurisprudence (including its contemporary ramifications). In English.

134A. Law and Literature in the Middle Ages
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

Not only does medieval literature represent and stage constant juridical proceedings (trials, ordeals, executions); law itself is often perceived as entertainment. Analyzing representative epic, theatrical, and legal texts, we will investigate the veritable spectacle of jurisprudence (including its contemporary ramifications).

134B. Trials of Desire in the Middle Ages
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

From knightly jousting to romantic monologues to lyric debates about fidelity, numerous medieval characters fight about love. Focusing on Chrétien de Troyes and the troubadours, we explore the literary and cultural ramifications of the representation of love as violent.

135. Medieval Paris
(4) BROWN, ENDERS

Prerequisite: French 101.

A study of the political, artistic, and intellectual culture of medieval Paris, with a focus on its changing royal image, architectural achievements, university system, urban celebrations, and literary monuments. In French.

135X. Medieval Paris
(4) BROWN, ENDERS

Prerequisite: upper-division standing.

A study of the political, artistic, and intellectual culture of medieval Paris, with a focus on its changing royal image, architectural achievements, university system, urban celebrations, and literary monuments. In English.

135XH. Medieval Paris—Honors
(1) BROWN, ENDERS

Prerequisites: concurrent enrollment in French 135X and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar taught by the course instructor. Students receive one unit for the honors seminar, for a total of 5 units in French 135X and 135XH.

136A. Love, Adultery and the Supernatural
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

The rise of medieval narrative literature and its development. Emphasis on the romance. In French.

136C. Medieval Drama
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

A study of the origins and development of French theatre to 1500 with emphasis on the comic genres. In French.

136E. Women in the Middle Ages
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

A study of the socio-political role of women in France from the twelfth to the fifteenth centuries through an examination of their image in literary texts written by both sexes. In French.

136X. Women in the Middle Ages
(4) BROWN, ENDERS

A study of the socio-political role of women in France from the twelfth to the fifteenth centuries through an examination of their image in literary texts written by both sexes. In English.

137X. Medieval Literature in Translation
(4) BROWN, ENDERS

A study of one or more major medieval works in translation such as *The Song of Roland*, the romances of Chrétien de Troyes, the Lais of Marie de France, or *The Romance of the Rose*. In English.

138. Modern Images of the Middle Ages: The Intersection of Text, History, and Film
(4) BROWN, ENDERS

Prerequisites: French 26 and 101.

Examination of major cultural aspects of the Middle Ages, including courtly love, the Arthurian myth, the legend of Robin Hood, witchcraft, scholasticism, the Inquisition, war and death, through the dual optic of medieval literature and modern film. In French.

138H. Modern Images of the Middle Ages
(1) BROWN, ENDERS

Prerequisite: concurrent enrollment in French 138 or 138X. Honors students only.

Eligible students will be invited to enroll in the honors seminar which is generally taught by the course instructor.

138X. Modern Images of the Middle Ages: The Intersection of Text, History and Film
(4) BROWN, ENDERS

Prerequisite: upper-division standing.

Course will examine major cultural aspects of the Middle Ages, including courtly love, the Arthurian myth, the legend of Robin Hood, witchcraft, scholasticism, the Inquisition, war and death, through the dual optic of medieval literature and modern film. In English.

139X. Torture
(4) ENDERS

An investigation into the history of torture from classical antiquity to Amnesty International. Discussions focus on its interrelations with literature, law, art history, gender, and violence in the media. Guest lecturers, as available. In English.

140B. Renaissance Poetry
(4) SKENAZI

Prerequisites: French 26 and 101.

A study of the great masterpieces of French Renaissance poetry with special attention given to poets of the "École de Lyon" and the "Pléiade." Works by Marot, Scève, Du Bellay, and Ronsard. In French.

140C. The Renaissance Literature of Ideas
(4) SKENAZI

Prerequisites: French 26 and 101.

The discovery of the new world. The encounter with the other, the questioning of a social order, the evolution of sciences. Readings: Marot, Cartier, Thévet, Rabelais, Du Bellay, Montaigne. In French.

141. Ambiguity and Opposition in Selected Authors of the Early Renaissance
(4) SKENAZI

Prerequisites: French 26 and 101.

The expression of resistance and reaction to the social order. May include works by Lemaire de Belges, Marot, Rabelais, Scève. In French.

142. French Theatre
(4) SKENAZI

Prerequisites: French 26 and 101.

A study of the meaning and the function of French theatre throughout the centuries, in connection with the cultural context of the day. Plays by Molière, Beaumarchais, Hugo, Musset, Ionesco, Beckett. In French.

142X. French Theatre in Translation
(4) SKENAZI

A study of the meaning and the function of French theatre through the centuries, in connection with the cultural context of the day. Plays by Molière, Beaumarchais, Hugo, Musset, Ionesco, Beckett. In English.

143. Belgian Literature in French
(4) SKENAZI

Prerequisites: French 26 and 101.

A study of selected texts of nineteenth- and twentieth-century Belgian literature in relation to the visual arts of the period. Works by Maeterlinck, Verhaeren, Ghelderode. In French.

144. The Rise of Nationalism in the Renaissance
(4) SKENAZI

Prerequisites: French 26 and 101.

Political discourse in the Renaissance. The expression of nationalism in selected texts and documents from the sixteenth century. In French.

145X. Irony in the Renaissance
(4) SKENAZI

How can irony provide an answer to religious, social, political, and ethnic contradictions of a society? What are the expressions of irony in the Renaissance? Works by Boccaccio, Marguerite de Navarre, Erasmus, Rabelais, Montaigne. In English.

146X. Voyages to the Unknown
(4) SKENAZI

Same course as Comparative Literature 107.

The impact of the voyages of discovery on late fifteenth- and sixteenth-century Europe. Readings on real and imaginary voyages: Columbus, Cartier, Léry, More, Rabelais, Montaigne. In English.

147. Paris, From the Renaissance to the Revolution
(4) NESCI, MACARTHUR

Prerequisites: French 26 and 101.

The historical and artistic features of Paris (sixteenth to eighteenth centuries), focusing on how the monarchy wrote the city in its own image, and on the guidebooks to the monuments. Birth of urban ethnography, with Mercier's *Tableaux de Paris*. In French.

147X. Paris, From the Renaissance to the Revolution
(4) COURTINE, SKENAZI

Prerequisite: upper-division standing.

The historical and artistic features of Paris (sixteenth to eighteenth centuries), focusing on how the monarchy wrote the city in its own image, and on the guidebooks to the monuments. Birth of urban ethnography, with Mercier's *Tableaux de Paris*. In English.

150A. The Early Seventeenth Century
(4) TOBIN

Prerequisites: French 26 and 101.

Analysis of literary, philosophical, and cultural trends of the first half of the seventeenth century. Esthetics of mannerism (Théophile, Saint-Amant), classicism (Malherbe, Racan), Préciosité (Voiture, Montausier), French mannerist tragedy (Rotrou, Corneille). Birth of modern rationalism and importance of neostoicism in Descartes' works. Class reading and discussions supplemented by lectures on aspects of culture (religion, politics, society). Documentary films used. In French.

150B. The Age of Louis XIV
(4) TOBIN

Prerequisites: French 26 and 101.

The development of literary genres between 1660 and 1680. Pascal, Racine, Molière, La Fontaine, La Rochefoucauld, Mme de La Fayette studied as examples of that ideal which attempts a balance, through tension of mannerism and classicism. Discussions of art and architecture will supplement literary analyses. In French.

154. Comedy in the Seventeenth Century
(4) TOBIN

Prerequisites: French 26 and 101.

Survey of the theories of the comic in the seventeenth century; discussion of the major comedies from 1637 to 1667, including farces, literary parodies, baroque comedy, social satire, and two enigmatic plays: Molière's *Dom Juan* and *Le Misanthrope*. In French.

160A. Introduction to Eighteenth-Century French Thought
(4) STURM

Prerequisites: French 26 and 101.

A reading of basic Enlightenment texts, stressing the fundamental works of Rousseau, Voltaire, Diderot, Laclos, and other major figures of the century. In French.

160B. Eighteenth-Century French Novel
(4) MACARTHUR

Prerequisites: French 26 and 101.

The novel's progression from banned genre to predominant literary form. Works by authors such as Prévost, Marivaux, Graffigny, Diderot, Laclos, and Sade. In French.

160C. Eighteenth-Century French Theatre
(4) MACARTHUR

Prerequisites: French 26 and 101.

A study of eighteenth-century plays, and of the controversies over acting and the role of the theatre in society. Plays and essays by Marivaux, Voltaire, Sedaine, Diderot, Rousseau and Beaumarchais. In French.

160X. The Power of Negative Thinking: Sartre, Adorno, and Marcuse
(4) STURM

Critical perspectives on man and culture by three of the great myth-shattering thinkers of the century. Topics: the social function of art, the Freudian legacy, utopia revisited, work and play, etc. In English.

163. The Politics of Paradise
(4) STURM

Prerequisites: French 26 and 101.

Rousseau's two *Discourses*, *The Social Contract*, and *Emile*, along with Voltaire's *Candide*, *Le Mondain*, and other works are subjected to content analysis. Focus on rhetoric of utopia and its political infrastructure. In French.

164. Literature in the Age of Anxiety
(4) STURM

Prerequisites: French 26 and 101.

Works dramatizing the plight of modern man faced with existential dilemmas and extreme situations. Sartre, Camus, Gide, Beckett, and others. In French.

166. Sartre: Recounting Lives
(4) STURM

Prerequisites: French 26 and 101.

Investigation of the variety of angles from which Sartre recounts lives, whether it be his own or another's, real or fictional. Cognitive issues and dilemmas of biography, autobiography, and case studies investigated from a modern-critical perspective. In French.

166X. Recounting Lives
(4) STURM

An investigation of how Sartre, Camus and Gide recount lives—their own or another's, real or fictional. Issues of biography, autobiography, and case studies will be addressed from a contemporary critical perspective. In English.

167X. Problems of Ending in Poetry and Fiction
(4) MACARTHUR

An investigation of the thematic and formal elements that make readers feel a work has ended, and of the connections between different types of endings and political, social, and religious structures and beliefs. Authors such as Ronsard, Diderot, Flaubert, Mallarmé. In English.

168. French Women Writers
(4) MACARTHUR

Prerequisites: French 26 and 101.

A survey of works by women writers from different periods. Readings vary from quarter to quarter. Authors such as Marie de France, Marguerite de Navarre, Lafayette, Graffigny, de Staël, Sand, Colette, Duras. In French.

169A. Visions of Alienation
(4) NESCI, MALEUVRE

Prerequisites: French 26 and 101.

Figures of deviance, marginality, prostitution, and social misery as testimonies to the pathology of the modern condition. Study of de Staël, Balzac, Sand, Flaubert, Zola, Durkheim and Freud. In French.

169AX. Visions of Alienation
(4) NESCI, MALEUVRE

Not open for credit to students who have completed French 171AX.

Figures of deviance, marginality, prostitution, and social misery as testimonies to the pathology of the modern condition. Study of de Staël, Balzac, Sand, Flaubert, Zola, Durkheim and Freud. In English.

169B. Paris in Nineteenth-Century Literature and Art
(4) NESCI, MALEUVRE

Prerequisite: upper-division standing.

Not open for credit to students who have completed French 171B.

Literary and artistic representations of Paris as the dreamworld of modernity. Writers: Balzac, Baudelaire, Hugo, Flaubert, Zola. Artists: Degas, Manet, the Impressionists. Main themes: visual culture, painting of modern life, Paris and revolution, Paris underground. In French.

169BH. Time Off in Paris—Honors
(1) NESCI

Prerequisites: concurrent enrollment in French 169BX and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar generally taught by the course instructor. Students receive one unit for the honors seminar, for a total of 5 units in French 169BX and 169BH.

169BX. Time Off in Paris
(4) NESCI

Not open for credit to students who have completed French 171BX.

Wandering the Parisian streets in the nineteenth

century. Focus on the rise of a new urban self and a gendered urban consciousness in Balzac, Baudelaire, Zola. Painting of modern life in Manet and the Impressionists. Paris as the dreamworld of modernity. In English.

169CH. Underground Paris
(1) PRIETO

Prerequisites: concurrent enrollment in French 169CX and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar generally taught by the course instructor. Students receive one unit for the honors seminar, for a total of 5 units in French 169CX and 169CH.

169CX. Underground Paris
(4) PRIETO

Twentieth-century Paris as it has been imagined and observed in literature and film: the futuristic visions of Jules Verne and Godard; surrealist Paris; Paris as a cultural mecca; the metro; slums and suburbs, etc. In English.

169DX. Close Encounters
(4) MALEUVRE

Prerequisites: Writing 2 and 50.

Art, literature and the question of ethics: responsibility and the other, secrecy and history, love and violence, and the open question of what "being human" describes. Constant, Camus, Sartre, Dostoievsky, Blanchot, Jabès, Benjamin, etc.

169EX. God is Dead
(4) MALEUVRE

Prerequisites: Writing 2 and 50.

Tracing the theme of the silent god, and the withdrawal of the divine from "the destitute world," in modern prose, poetry and philosophy. Lamartine, Nerval, Jean Paul, Hölderlin, Nietzsche, Heidegger, Rilke, Bataille, etc.

170B. The Heroism of Modern Life
(4) NESCI, MALEUVRE

Prerequisites: French 26 and 101.

Baudelaire's *Les Fleurs du Mal* and Flaubert's *Madame Bovary* as the first masterpieces of literary modernity. Study of *réalisme* and the new cultural realities characteristic of the crisis of art during the Second Empire (1852-1870). In French.

170X. Trauma
(4) MALEUVRE

The radically individual nature of suffering, the shattering of experience and the muting of the survivor, from Greek tragedy to our post-catastrophic century. Readings include the Book of Job, Sophocles, Shakespeare, Montaigne, Chateaubriand, Balzac, Duras, Levi, etc. In English.

171AA-ZZ. Studies in the Nineteenth Century
(4) STAFF

Prerequisites: French 26 and 101.

May be repeated for credit provided letter designations are different.

In-depth study of texts and themes from the nineteenth century in France. In French.

A. The Romantic Movement in France

171AX-ZX Studies in the Nineteenth Century
(4) NESCI, MALEUVRE

May be repeated for credit provided letter designations are different.

In-depth study of texts and themes from the nineteenth century in France. In English.

AX. The Romantic Movement in France

171X. French Feminism in the Nineteenth Century
(4) NESCI

Same course as Women's Studies 171CN.

Women's new positions in the public sphere of power following the French Revolution and their changing personal and collective aspirations throughout the century. Rights of women, women's voice and writing (journalism and autobiography), feminism, socialism and revolution. In English.

172X. Literature and the Rise of the Modern World
(4) NESCI

A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator. Lectures and readings in English.

175X. The French Revolution: A Cultural History
(4) NESCI

Cultural origins of the French Revolution (1789-1799). Analyses of prints, texts, and films representing the performative aspect of revolutionary language. Gender, family romance, and citizenship in Revolutionary Paris. The legacy of the Revolution to modern political culture. In English.

176X. French Travelers in America
(4) NESCI

Study of French travelers in America, from Chateaubriand and Tocqueville to Baudrillard. Focus on French readings of the American dream, the confrontation between images of utopias and counter-utopias. The discovery of America as rediscovery of Europe.

178A-B-C. Special Topics in French Cinema
(4) STAFF

Special topics in French cinema such as recent film, the representation of history, the counterpoint of text and image. Different letters designate different areas of study. In French.

178X. French Film: Theory and Practice
(4-4) STAFF

French film from its beginnings to the late 1930s. Course will view the relationship between film and the other arts (surrealism, cubism) as well as the way film reflects social and political issues. Jean Cocteau, René Clair. In English.

178Y. French Film: Theory and Practice
(4) STAFF

The course focuses on French film from the late 1930s to the present. It pays particular attention to the emergence of New Wave directors such as Jean-Luc Godard and François Truffaut. In English.

178Z. Technology and Cinema
(4) STAFF

Same course as Film Studies 178Z.

Cinema fulfills and breaks down the technological project of "framing" the whole of existence. Themes: humanity and/as technological threat, the decline of language and ethics, the culture industry, science fiction. Screenings include Tarkovsky, Kubrick, Star Wars, Marker, Godard, Méliès, Lang. Lectures and readings in English.

180A. The Surrealist Revolution
(4) LÉVY, PRIETO

A multimedia look at Surrealism's attempt to harness the power of the unconscious. Use of the words and images of the Surrealists to understand how they hoped to revolutionize the way we think and live.

180B. Modern French Literature
(4) LÉVY, PRIETO

The course, devoted primarily to the 1930s and 1940s, will examine novelists such as Bernanos, Queneau, Beckett, Céline, and Malraux, dramatists such as Anouilh and Giraudoux, and will discuss writers associated with Existentialism and/or later Surrealism (Prévert, Michaux, Eluard). In French.

180C. Post-War Avant-Gardes
(4) LÉVY, PRIETO

This course, devoted to aspects of French poetry, fiction, and film since World War II, may treat modern poets, "new novelists" (to be chosen among Sarraute, Duras, Robbe-Grillet, Butor), playwrights of the "absurd" and/or New Wave filmmakers. In French.

180D. Twentieth-Century Theater: Know Your Classics
(4) PRIETO

The twentieth century has been fertile in stage adaptations of the classic myths of Western civilization. This course will study such plays, emphasizing both the reliance on ancient tales and their adaptation to contemporary issues.

180X. Existentialist Literature in Translation
(4) STAFF

Readings in fiction, drama, and philosophical essays from the French Existentialist movement. Readings will include Jean-Paul Sartre, Albert Camus, Simone de Beauvoir. The major existentialist themes (commitment, anguish, subjectivity, etc.) will be considered. In English.

181. Contemporary French Literature
(4) LÉVY, PRIETO

Prerequisites: French 26 and 101.

From the Writing of Adventure to the Adventure of Writing. A study of contemporary works (Butor, Robbe-Grillet, Blanchot, Beckett, Sollers) and avant-garde movements ("Nouveau Roman," "Tel Quel") that challenge, at various levels, the very notion of "Literature." In French.

181X. Narratology
(4) PRIETO

Study of formal elements of narrative exemplified by various fictional genres. In addition to learning narrative theory, students will apply practical techniques of analysis to specific literary texts. Course should interest students in communication theory, anthropology as well as literature. In English.

182. Literary Translation: Theory and Practice
(4) LÉVY

Prerequisites: French 26 and 101.

Exploration of the various theories of translation. Offers a practical component where students work on a specific translation project. Examination of literary, philosophical, linguistic and theoretical texts by Jakobson, Benjamin, Steiner, Derrida and others. In French.

183X. From Existential Phenomenology to Structuralism
(4) STURM

Intellectual movements in postwar France. Critical readings and discussion in literature, psychoanalysis, art, and systems. Sartre, Lévi-Strauss, Lacan, Barthes, Foucault, and others. In English.

184A-B. Contemporary French Poetry
(4-4) LÉVY

Prerequisites: French 26 and 101.

From Baudelaire to Prévert: a critical study of significant poems since 1857, against the background of Parnassian, symbolist, cubist, and surrealist ideas. Study of poetic materials and techniques. Several short papers, *explications de texte*, practice in translation. In French.

185A. Twentieth-Century Women Writers
(4) NESCI

Prerequisites: French 26 and 101.

Not open for credit to students who have completed French 185.

Twentieth-century women writers from France, Belgium, Switzerland, Africa, the Caribbean, and Quebec. The influence of race, language, nationality and sexuality on identities; and process of becoming a writer, in authors including Colette, Beauvoir, Nathalie Sarraute, Maryse Conde, Mariama Ba.

185B. Gender and Sexuality in France
(4) NESCI

Prerequisites: French 26 and 101.

Role of gender and the function of sexuality in the formation of identities in French culture. Themes of family, love, marriage, political and interpersonal relationships in literary texts, films, paintings, and diverse media.

186. The Detective Story
(4) PRIETO

Prerequisites: French 26 and 101.

The detective story as a specifically modern genre, one obsessed with the search for The Truth. Exploration of different ways its conventions have been put to use in modern literature and film. In French.

190X. Cross-Currents in Modern French and Italian Film
(4) LAWTON, MALEUVRE

Prerequisite: upper-division standing.

Thematic parallels within these major filmic traditions. Treatment of the following central themes: war, death, love, justice, consumerism, etc., by such directors as Renoir, Fellini, Godard, Truffaut, Malle, Bertolucci, Scola, and others. In English.

192. Littérature de la Francophonie
(4) PRIETO

Prerequisites: French 26 and 101.

Literature in French by writers outside France. Material includes representative authors and literary movements of Canada, Haiti, Senegal, Zaire, etc. Discussion of questions of national identity and literary relations. In French.

192X. Post-colonial Francophone Narrative
(4) PRIETO

Prerequisite: upper-division standing.

French-language narratives from the Caribbean, West Africa, and the Maghreb (Chamoiseau, Kourouma, Djebar, etc.). Born of the conflict between, and hybridization of widely differing cultural traditions, these texts illuminate colonial history as well as our multicultural future. In English.

193X. Structuralism and Poststructuralism
(4) LÉVY

Study of fundamental concepts of structuralism and poststructuralism. Examination of the work of some of the following modern thinkers: Saussure, Jakobson, Lévi-Strauss, Barthes, Kristeva, Derrida, Lacan, Foucault, Lyotard, Serres. In English.

194. Science and Fiction
(4) LÉVY

Prerequisites: French 26 and 101.

Study of the interaction between science and literature in the modern period. Reading in the philosophy of science (Cuvier, Claude Bernard, Einstein, Heisenberg, Weiner, Mandelbrot) and literature (Balzac, Maupassant, Verne, Stevenson, Musil, Calvino, Ponge). In French.

194X. Science and Fiction
(4) LÉVY

Study of the interaction between science and literature in the modern period. Reading in the philosophy of science (Cuvier, Claude Bernard, Einstein, Heisenberg, Weiner, Mandelbrot) and literature (Balzac, Maupassant, Verne, Stevenson, Musil, Calvino, Ponge). In English.

195. The Poet's Identity
(4) LÉVY

Prerequisites: French 26 and 101.

Study of the way poets present themselves through their poetry and the different functions they assign to their poetry. Close readings of French poetry from the late middle ages to the present. In French.

196. Fantasy and the Fantastic
(4) LÉVY

Prerequisites: French 26 and 101.

Exploration of the fantasy theme and fantastic literature in nineteenth- and twentieth-century French literature. Includes some of these authors: Nerval, Nodier, Maupassant, Gautier, Villiers, Mérimée, Balzac, Breton, Paulhan. In French.

196X. Fantasy and the Fantastic
(4) LÉVY

Exploration of the fantasy theme and fantastic literature in nineteenth- and twentieth-century French literature. Course will include some of these authors: Nerval, Nodier, Maupassant, Gautier, Villiers, Mérimée, Balzac, Breton, Paulhan. In English.

197. Senior Seminar
(4) STAFF

Prerequisite: consent of instructor.

Open to students who have completed 20 or more upper-division units in the major. May be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major.

A seminar enabling students to synthesize knowledge gained in upper-division French courses, both at UCSB and through the Education Abroad Program. Topics vary, but involve investigations of theoretical issues related to French literature and culture. In French.

199. Independent Studies in French
(1-5) STAFF

Prerequisites: upper-division standing; completed at least two upper-division courses in French.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Individual investigations in literary or linguistics fields.

199RA. Independent Research Assistance
(1-5) STAFF

Prerequisites: upper-division standing; completed at least two upper-division courses in French; consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research, under the supervision of a consenting faculty member.

GRADUATE COURSES

200AA-ZZ. Topics in French Literature
(4) STAFF

May be repeated for credit provided letter designations are different.

Studies of various topics in French literature.

A. Travelling in the Renaissance
B. Nineteenth and twentieth centuries
C. Irony in the Renaissance
D. Misery
E. Nomadic Thought/Nomadic Literature
F. Science and Literature
G. What is an Author?
F. Nationalism in the Renaissance

202A-D. Advanced Critical Writing
(4) ENDERS

Prerequisite: graduate standing.

May be repeated for credit provided letter designations are different.

Workshop on the style, structure, and ideology of crafting persuasive critical arguments and creating authority in writing (in French or English). Focus on introductions, conclusions, definitions, proofs, refutation, and interaction with sources through analysis, critique, practice, and peer review.

A. Writing For Publication
B. Writing the Thesis
C. Writing and the Profession
D. Special Topics in Writing

203. Advanced French Phonetics
(4) STAFF

An accelerated review of the principles covered in French 103A-B-C, but without laboratory practice. An introduction to acoustic phonetics.

204A. History of French Language
(4) ASHBY

Prerequisites: one year of college Latin; French 203.

The linguistic history of French, stressing the major changes in the phonological, morphological, and syntactic systems from Latin to modern French.

204B. Old French Philology
(4) ASHBY

Prerequisites: one year of college Latin; French 203 and French 204A.

Reading and linguistic analysis of old French texts.

206. Introduction to Old French
(4) BROWN, ENDERS

Introduction to Old French and examination of a number of early medieval works.

207. Literary Criticism: Medieval and Modern
(4) BROWN, ENDERS

Prerequisite: consent of instructor.

A study of key critical texts of the medieval student and/or modern medievalist, including literary prologues (Marie de France, Chrétien, Mauchat), scholastic treatises, and the theories of mouvance (Zumthor) and medieval alterity (Jauss).

208. Studies in French Linguistics
(4) ASHBY

May be repeated for credit with different topics for a maximum of 20 units.

Selected problems in linguistics will be studied with a different specialization each quarter.

214. Techniques of Literary Analysis
(4) STAFF

Approaches to the three main literary genres (poetry, novel, and theater) based on close textual analysis, readings in theory, and research methods. For advanced undergraduates and beginning graduate students.

216. Narratology
(4) PRIETO

Course taught in English, although knowledge of French is required.

Course will study the structures, modes, and levels of fictional narrative by applying recent analytical methods to selected texts: formalism, structuralism, semiotics, deconstruction, etc. Students will analyze their own story after an analytical model for an oral report and term paper.

222. Linguistique Structurale et Analyse Structurale des Textes
(4) COURTINE

Prerequisite: consent of instructor.

The founding principles of structural linguistics, and how linguistic methods can be applied to the analysis of literary texts (Barthes, Greimas), folktales (Propp), myths or genealogies (Lévi-Strauss), semiology (Barthes, Prieto) and psychoanalysis (Lacan).

224AA-ZZ. History of the Body
(4) COURTINE

Prerequisite: graduate standing.

Focus on the body and body language as it has been transmitted historically through such sources as medical treatises, literary works, portraits and photographs.

A. Physical Expression of Emotions, 16th-19th Centuries
B. Monsters
C. Culture and Curiosity, 18th and 19th Centuries

235. The Medieval Book as Literary Artifact
(4) BROWN

Prerequisite: consent of instructor.

Study of the materiality of books as critical to understanding literary works, especially during, but not limited to, the Middle Ages. Emphasis on the dynamic interaction between text and paratext, between writers and patrons, between authors, scribes and editors.

236AA-ZZ. Studies in Medieval Literature
(4) STAFF

This course may be repeated provided the letter designation is different.

In-depth study of selected texts of medieval literature.

A. From Oral to Written
B. "Courtly Love" and "Courtly Romance"
C. Words and Music
D. The Dynamics of Allegory
E. Late Medieval Textuality and Poetic Authority
F. Theater and Theatricality
G. Representations of Medieval Gender
H. Torture and Truth in the Middle Ages
I. The Poetics of Silence
J. Trial, Ordeal, and Desire in the Middle Ages
K. Medieval Literature and Magic

237. The Book in Performance
(4) BROWN, ENDERS

Prerequisite: consent of instructor.

A study of the intersection between the medieval book and medieval drama, including the performative qualities of the medieval text, the drama of the page, and the "livresque" qualities of theater.

240A-E. Studies in the Sixteenth Century
(4) SKENAZI

Prerequisite: consent of instructor.

May be repeated for credit provided the letter designation is different.

Study in depth of selected texts of the sixteenth century.

A. Rabelais
B. Pléiade
C. Montaigne and Marguerite de Navarre
D. French Renaissance Theatre
E. Renaissance Court Poetry

241. Figures of Instability
(4) SKENAZI

Representation of fragmentation and change in the works of Du Bellay and Montaigne.

242A. Medieval Rhetoric and Literature
(4) ENDERS

Prerequisite: consent of instructor.

As a veritable theory of literature, rhetoric instilled skills in memory, performance, structure, style, and creativity. Readings focus on the kinship between rhetoric and literature as exemplified in such authors as Chrétien, Abélard, Machaut, Gréban, Jean de Meung, and Christine de Pizan.

242B. Modern Theories of Rhetoric
(4) SKENAZI

Prerequisite: consent of instructor.

A study of figures of discourse such as metonymy and metaphor. Works of Fontanier, Jakobson, Genette, Lacan, Derrida, and Ricoeur.

250A-H. Studies in the Seventeenth Century
(4) TOBIN

May be repeated for credit provided the letter designation is different.

Study in depth of selected texts of the seventeenth century.

A. Corneille
B. Racine
C. Molière
D. Pascal
E. La Fontaine
F. Moralistes
G. Classical Hero
H. The Baroque

260A-Z. Studies in the Eighteenth Century
(4) MACARTHUR, STURM

Prerequisite: graduate standing.

May be repeated for credit provided the letter designation is different.

Texts of the eighteenth century.

A. Voltaire
B. Diderot
C. Rousseau
D. The Novel
E. Political Thought in Belletristic Literature
F. Utopia in the Siècle des Lumières
G. Man against Myth
H. Negation and Myth in the Age of Enlightenment
I. Reason and Nature in the Enlightenment
J. Women Writers
K. Censorship in the Eighteenth Century
L. Reading Practices and the Public Sphere

261. Rousseau and His Critics
(4) STAFF

A study of Rousseau's major works as a point of departure in a review of past and present critical views.

262. The Confessional Urge: Studies in French Autobiography
(4) STURM

A critical inquiry into motivation and strategies of the genre. Casanova, Rétif, Rousseau, Leiris, Adamov, Sartre, Barthes, and others in selected texts. Psychoanalytic orientation.

263. Rousseau and the Alienation of Modern Man
(4) STURM

In condemning the enlightenment notion of progress, Rousseau became the first thinker to anticipate the dehumanized edifice of the modern era. Discussion of his views on politics, art, education, and his extraordinary influence will be considered through Freud and Marcuse.

265. The Epistolary Form
(4) MACARTHUR

Prerequisite: graduate standing.

Study of real and fictional correspondences in the light of recent criticism. Emphasis on problems of epistolary narrative, and on the association between women and letter writing. Works by Abélard and Héloise, Guilleragues, Laclos, Charrière, Balzac, Colette.

270AA-ZZ. Studies in the Nineteenth Century
(4) MALEUVRE, NESCI

May be repeated for credit provided letter designations are different.

In-depth study in depth of selected texts of the nineteenth century.

A. Balzac
B. Stendhal
C. Flaubert
D. Zola
E. Romantic Poetry
F. Baudelaire
G. Symbolism
H. Literature of the Second Empire
I. Theater
J. Hugo
K. Roman et Révolution
P. Memory Crises
Q. Bodies Exposed

270L. Literature and Society in the Novel
(4) NESCI

Prerequisite: graduate standing.

An inquiry into literature as a socio-political institution. Topics covered will be the representation of sexuality and the family in realism; the notion of text as social practice; the socio-cultural codes and modes that frame the literary representation.

270M. Dandies and Decadence
(4) MALEUVRE

Dandyism and its appeal to modernist reflection on figuration. Fin-de-siècle aesthetics of decadence will be tied to the uncertainty of figuration and the perversity of identity. Balzac, Baudelaire, Huysmans, Barbey d'Aurevilly, Lorrain, and Proust.

270N. Special Topics in the Nineteenth Century
(4) NESCI, MALEUVRE

Prerequisite: graduate standing.

Course content will vary.

271. Paris in 19th Century Literature
(4) NESCI

Prerequisite: consent of instructor.

Focus on literary and artistic representations of Paris in post-revolutionary France. Texts by Balzac, Baudelaire, Hugo, Flaubert, Rimbaud, Zola. We will study how artists attempt to represent Paris as a fragmented totality and give meaning to modernity and its unstable history.

274. Panoramic Literature
(4) NESCI, MALEUVRE

Focus on the expository spirit in nineteenth-century culture: world exhibitions, panoramic journalism, and encyclopedic collection. Of particular interest will be technologies of rationalizing circulation of goods and bodies.

275. Poetry and Communication Theory
(4) LÉVY

What constitutes the poetic message? How is it transmitted? What rules of communication does it follow and which ones does it break? This seminar will attempt to answer these questions through the study of seventeenth-, nineteenth-, and twentieth-century poets.

276. The Theory of Fantastic Literature
(4) LÉVY

Study of the current theories of fantastic literature and their limitations. Works by some of the following authors will be examined: Cazotte, Nerval, Gautier, Mérimée, Nodier, Villiers, Maupassant, Apollinaire, Breton, Genet, Paulhan.

277. The Representation of Science in Nineteenth- and Twentieth-Century Literature
(4) LÉVY

Focus on the epistemological, theoretical implications and the cultural impact that the philosophy of modern science brings to the study of literature.

278. Poetry and Modernity
(4) MALEUVRE

Focus on the conceptual aspect of poetry, its status as philosophical reflection, on the creative and meditative rapport between consciousness and the poem. De Staël, Desbordes-Valmore, Lamartine, Vigny, Hugo, Baudelaire, Rimbaud, Verlaine, Laforgue, Mallarmé, Lautréamont.

279. Contemporary Theory in Translation
(4) SNYDER

Prerequisite: graduate standing.

Survey of the principle issues of contemporary theory. Readings range from classic texts by Adorno, Bakhtin, Benjamin, Cixous, Foucault, Heidegger *et. al.* to recent essays in the new cultural studies. In English.

280AA-ZZ. Studies in the Twentieth Century
(4) STAFF

May be repeated for credit in combination with French 280A-M provided letter designations are different.

In-depth study of selected texts of the twentieth century.

A. Proust
B. Gide
C. Apollinaire
D. Existentialism
F. Theatre
G. Essay
H. Surrealism
I. Valéry
J. Contemporary Criticism
K. Camus
L. Politics and Literature
M. Sartre
N. Twentieth-Century Novel

281. Literature and Philosophy in Twentieth-Century Writing
(4) STURM

Modern perspectives in methodology, psychoanalysis, aesthetics, and politics, and their relation to the reading of literary texts. Mainly Sartre and Marcuse.

283. Francis Ponge
(4) LÉVY

Study of Francis Ponge as both poet and theoretician of literature. Particular attention will be paid to his writings which invoke the sciences.

284. Contemporary Poetry
(4) LÉVY

Survey of French poetry since 1945. Francis Ponge, René Char, Henri Michaux, Michel Deguy, Lorand Gaspar, Edmond Jabès, Jacques Dupin, André DuBouchet.

285. Twentieth-Century Poetry
(4) LÉVY

Valéry, Apollinaire, Reverdy, Jacob, Desnos, Eluard, Breton, Artaud, Char, Ponge, Michaux, Perse, Bonnefoy.

287. French Film and Theory
(4) STAFF

May be repeated with consent of instructor.

Analysis of French film which will attempt to integrate a cultural-historical approach together with some theoretical considerations. Content may vary.

290. Readings in Twentieth-Century Alienation
(4) STURM

The individual at odds with the myths and structures of the modern world, as perceived in his psychological, cultural, and aesthetic dimensions.

Selected works by: Sartre, Camus, Beckett, Genet, Foucault, and others.

292. Biography as Myth and Reality
(4) STURM
The real and imaginary "Case Studies" of Sartre and Freud. The orientation of the course will be philosophical and psychoanalytic.

293. Penser à Partir de Sartre: Philosophie, Fiction et Vérité
(4) STURM
Sartre's ambition to grasp all aspects of twentieth-century human experience ("totalisation") through his phenomenological approach will be investigated through his major texts and critical works.

294A. Francophone Literature: Introduction to Post-colonial Francophone Narrative
(4) PRIETO
Prerequisite: graduate standing.
Not open for credit to students who have completed French 294.
An overview of "*la Francophonie du Sud.*" Emphasis on literary depictions of colonial history and its aftermath in texts from the Caribbean, West Africa, and the Maghreb.

294B. Francophone Literature: The Caribbean
(4) PRIETO
Prerequisite: graduate standing.
Not open for credit to students who have completed French 294.
Readings from Haiti, Martinique, and Guadeloupe, with emphasis on the Creole oral tradition; slavery and the plantation system; race and multiculturalism; relations with France and the United States.

294C. Francophone Literature: West Africa
(4) PRIETO
Prerequisite: graduate standing.
Not open for credit to students who have completed French 294.
Readings from the Congo, Zaire, Senegal, Cameroon, etc. Emphasis on the transition to independence; the oral tradition; social critique in film and the novel; the interaction of traditional beliefs with Islam and Christianity.

294D. Francophone Literature: The Maghreb
(4) PRIETO, NESCI
Prerequisite: graduate standing.
Not open for credit to students who have completed French 294.
Readings from Algeria, Morocco, and Tunisia. Emphasis on Islamic tradition; modernization; gender issues in Islam; contemporary political transformations.

500. Apprentice Teaching
(4) SMORODINSKY
Units earned in this course, which are required of all teaching assistants, do not apply toward degree.
Includes orientation week, weekly meetings with supervisor, preparation of examinations, class visitations and discussions, videotaping of classes followed by review with supervisor, occasional workshops.

596. Directed Reading and Research
(2-6) STAFF
Prerequisite: consent of instructor.
Individual tutorial. Instructor is usually student's major professor. Students doing initial research on the doctoral dissertation may sign up for this course.

597. Independent Study
(4) STAFF
Prerequisite: consent of graduate advisor.
Individual research projects, supervised by a faculty member. Requires permission of graduate advisor to enroll.

598. Master's Thesis Research and Preparation
(1-12) STAFF
No unit credit allowed toward degree. S/U grade.
Only for research underlying thesis, writing thesis. Instructor should be chair of student's thesis committee.

599. Dissertation Research and Preparation
(1-12) STAFF
Only for the writing of the doctoral dissertation. Instructor should be chair of student's doctoral committee.

Italian Courses

LOWER DIVISION

Italian 1-6: Students in all sections of a given level progress at the same rate and cover the same amount of material. Students who have studied Italian at other institutions and wish to continue their study at UCSB are required to take the placement examination given by the department.

1. Elementary Italian
(4) STAFF
Introduction to the most basic elements of Italian grammar. Articles, adjectives, gender. Verbs in the present tense. (F,W)

2. Elementary Italian
(4) STAFF
Prerequisite: Italian 1.
Logical continuation of Italian 1. Direct and indirect pronouns. Verbs in the past tense and the imperfect. Emphasis on the correct writing and speaking of Italian. (F,W,S)

3. Elementary Italian
(4) STAFF
Prerequisite: Italian 2.
Continuation of Italian 2. Verbs in the future, conditional. Introduction to subjunctive. Further emphasis on the correct writing and speaking of Italian.

4. Intermediate Italian
(4) STAFF
Prerequisite: Italian 3.
The beginning of 2nd year Italian, which is more demanding than the first year. Emphasis on reading and comprehension of modern texts, with comprehensive review of grammar.

5. Intermediate Italian
(4) STAFF
Prerequisite: Italian 4.
Logical continuation of Italian 4, based on reading and comprehension of more elaborate texts.

6. Intermediate Italian
(4) STAFF
Prerequisite: Italian 5.
Reading and comprehension of chosen texts (short stories, etc.) and compositions. Readings chosen from such representative anthologies as Tempi Moderni (Burney).

8A-B-C. Italian Conversation
(2-2-2) STAFF
Prerequisite: Italian 3.
Contemporary issues to be selected by instructor. Debates and discussion to be organized among students themselves.

9V. Beginning Italian for Musicians
(4) STAFF
Comprehensive course designed to familiarize musicians with basic Italian grammar, culture, musical terminology, situational language usage as well as Italian prose and lyrics as applied to vocal literature. Emphasis on oral skills. In Italian.

10V. Intensive Italian for Musicians
(4) STAFF
Comprehensive course designed to familiarize musicians with basic Italian grammar, culture, musical terminology, situational language usage as well as Italian prose and lyrics as applied to vocal literature. Emphasis on oral skills. For advanced singers/musicians. In Italian.

11A-B. Italian for Graduate Students
(4-4) STAFF
Prerequisite: graduate standing. Italian 11A for Italian 11B.
Designed for graduate students who need to satisfy language requirements. Grammatical preparation and practice for translation, but no individual projects. No knowledge of Italian required for 11A.

20X. Introduction to Italian Culture
(4) STAFF
Not open for credit to students who have completed Italian 106X-Y-Z.
A sweeping inquiry into Italian culture, from its origins to its current trends. Exploration of the media, sports, gastronomy, art, music, politics, language, regional and ethnic identity, sexuality, the family, and urban life. In English.

21Y. Great Italian Writers
(4) STAFF
An overview of the finest Italian literature available in translation, ranging from lyrics of the *dolce stil novo* poets to modernist writing by Anna Banti, hard-boiled detective fiction by Gadda, and postmodern stories by Calvino. In English.

30Z. Italy in Film
(4) STAFF
An introduction to the great directors of the Italian cinema including Rossellini, De Sica, Fellini, Visconti, Antonioni, Pasolini, Rosi, and Pontecorvo. Overview of the chief social and aesthetic issues of postwar Europe. In English (films subtitled).

UPPER DIVISION

Italian 1-6 is prerequisite to all upper-division courses taught in Italian.

Courses whose numbers are followed by X, Y, Z are taught in English.

101. Advanced Reading and Composition
(4) STAFF
Prerequisites: Italian 1-6.
Advanced reading and composition. Introduction to literature and literary analysis through careful readings of selections from major contemporary authors. In Italian.

102. Advanced Reading and Literary Analysis
(4) STAFF
Prerequisite: Italian 6.
A further development of Italian 101 designed to introduce students to more advanced readings in poetry and prose and to provide training in the methodology of literary analysis. A preparation for upper-division literature courses in Italian. In Italian.

108. Business Italian
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed Italian 108A-B-C.
Study of both the language and practice of business in contemporary Italy. Particular attention paid to new terminology and to usages that differ from everyday Italian language and comportment. In Italian.

109. Advanced Italian Conversation
(4) STAFF
Prerequisites: Italian 8A-B-C.
Discussion of contemporary issues selected by the instructor. Emphasis on idiomatic speech and vocabulary building.

111. Italian Short Fiction
(4) SNYDER
Prerequisite: upper-division standing.
A study of the briefest forms of Italian narrative

fiction ranging from the *exemplum* to the TV script, the short story, and the novella. In Italian.

111X. Italian Short Fiction in Translation
(4) SNYDER

Prerequisite: upper-division standing.

A study of the briefest forms of Italian narrative fiction ranging from the *exemplum* to the TV script, the short story, and the novella. In English.

112. Italian Narrative Fiction
(4) SNYDER

Prerequisite: upper-division standing.

A study of the longer forms of Italian narrative fiction, particularly the prose romance and the novel. In Italian.

112X. Italian Narrative Fiction in Translation
(4) SNYDER

Prerequisite: upper-division standing.

A study of the longer forms of Italian narrative fiction, particularly the prose romance and the novel. In English.

113. Italian Poetry
(4) STAFF

Prerequisite: upper-division standing.

A study of the various practices of Italian poetry ranging from the epic to the lyric to the avant-garde text. In Italian.

113X. Italian Poetry in Translation
(4) STAFF

Prerequisite: upper-division standing.

A study of the various practices of Italian poetry ranging from the epic to the lyric to the avant-garde text. In English.

114X. Dante's "Divine Comedy"
(4) SNYDER

Dante's masterpiece, *The Divine Comedy*, remains among the most astonishing works of world literature. This course follows the pilgrim's progress through *Inferno*, *Purgatorio* and *Paradiso* in search of "the love that moves the sun and the other stars." In English.

119. The Art of Translation
(4) STAFF

Prerequisites: Italian 101 and 102.

An intensive workshop exploring the theory and practice of translation. Students work at translating texts from Italian to English and vice versa.

121. The Art of Italian Drama (Page to Stage)
(4) STAFF

Prerequisite: upper-division standing.

Intensive study of a single text for the Italian theater leading to its staging in the original language with students as actors. In Italian.

124. Italian Theater
(4) SNYDER

Prerequisite: upper-division standing.

A study of the most important Italian theatrical texts and practices from the Renaissance comedy and the *commedia dell'arte* to contemporary works for the stage. In Italian.

124X. Italian Theater in Translation
(4) SNYDER

Prerequisite: upper-division standing.

A study of the most important Italian theatrical texts and practices from the Renaissance comedy and the *commedia dell'arte* to contemporary works for the stage. In English.

125. Italian Contemporary Writing
(4) STAFF

Prerequisite: upper-division standing.

A study of current practices of writing in Italy ranging from autobiography to cultural journalism to new avant-garde fictions. In Italian.

125X. Italian Contemporary Writing in Translation
(4) STAFF

Prerequisite: upper-division standing.

A study of current practices of writing in Italy ranging from autobiography to cultural journalism to new avant-garde fictions. In English.

126AA-ZZ. Literatures in Italian
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

The literatures of Italy do not constitute a single canon but include many overlooked regional, migrant, and postcolonial texts all written in various forms of Italian. Consult the department office for specific topics. In Italian.

138AA-ZZ. Cultural Representations in Italy
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

A study of the ways in which representational practices (texts, images, sounds) have affected Italian culture over the ages. Focus on such topics as the body, power, desire, and revolution. In Italian.

138AX-ZX. Cultural Representations in Italy
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

A study of the ways in which representational practices (texts, images, sounds) have affected Italian culture over the ages. In English.

A. Children's Literature

B. The Great War

142. Women in Italy
(4) STAFF

Prerequisite: upper-division standing.

An intensive study of writings by and about women from the early modern and modern eras. In Italian.

142X. Women in Italy
(4) STAFF

Prerequisite: upper-division standing.

An intensive study of writings by and about women from the early modern and modern eras. In English.

143. The Practices of the Everyday
(4) STAFF

Prerequisite: upper-division standing.

The organization of the subject's everyday experience in literary works on manners, fashions, love, work, and the family. In Italian.

143X. The Practices of the Everyday
(4) STAFF

Prerequisite: upper-division standing.

The organization of the subject's everyday experience in literary works on manners, fashions, love, work, and the family. In English.

144AA-ZZ. Gender and Sexuality in Italian Culture
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Studies in the production of gender and the functions of sexuality in Italian culture including plays, films, paintings, and literary texts. In Italian.

144AX-ZX. Gender and Sexuality in Italian Culture
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Studies in the production of gender and the functions of sexuality in Italian culture including plays, films, paintings, and literary texts. In English.

146. The Jews in Italy
(4) STAFF

Prerequisite: upper-division standing.

The development of Jewish culture in Italy as reflected in historical documents and literary texts. In Italian.

146X. The Jews in Italy
(4) STAFF

Prerequisite: upper-division standing.

The development of Jewish culture in Italy as reflected in historical documents and literary texts. In English.

147. Migrations To and From Italy
(4) STAFF

Prerequisite: upper-division standing.

A study of dispersed and diasporic writing on migration including such topics as Italian-American literature, and fiction from the new waves of immigrants into Italy from Africa. In Italian.

147X. Migrations To and From Italy
(4) STAFF

Prerequisite: upper-division standing.

A study of dispersed and diasporic writing on migration including such topics as Italian-American literature, and fiction from the new waves of immigrants into Italy from Africa. In English.

148. Cities of Italy
(4) SNYDER

Prerequisite: upper-division standing.

A close-up look at the great texts, histories, and cultures of Italian cities such as Rome, Venice, Florence, Ferrara, and Naples. In Italian.

148X. Cities of Italy
(4) SNYDER

Prerequisite: upper-division standing.

A close-up look at the great texts, histories, and cultures of Italian cities such as Rome, Venice, Florence, Ferrara, and Naples. In English.

149. Regions of Italy
(4) STAFF

Prerequisite: upper-division standing.

A study of the distinctive regional cultures of Italy ranging from the southern Tyrol to Sicily, and their cultural practices and products. In Italian.

149X. Regions of Italy
(4) STAFF

Prerequisite: upper-division standing.

A study of the distinctive regional cultures of Italy ranging from the southern Tyrol to Sicily, and their cultural practices and products. In English.

153X. Writing Italy
(4) STAFF

Prerequisite: upper-division standing.

Not open for credit to students who have completed Italian 153.

Italy as portrayed by writers ranging from Montaigne to Goethe, Stendhal to Butor, Berger to Ondaatje, in novels, travel narratives, and diaries. Study of the textual construction of Italy as a figure for the European "other." In English.

160. Senior Seminar
(4) STAFF

Prerequisite: upper-division Italian major.

May be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major.

Seminar for Italian majors wishing to participate in intensive study of a major work of Italian culture (filmic, literary, or artistic) of the past or present. See department for further information. In Italian.

161AX-ZX. The European Union
(4) PADULA

Introduction to the history and organization of the European Union (the institutions, policies, goals, and successes in the EU). Focus on the ongoing process of economical, political, social, and cultural integration in Europe since the Second World War. In English.

162AX-ZX. Comparative Cultures: France and Italy
(4) STAFF

Interdisciplinary comparative study of selected cultural and social issues in France and Italy from the early medieval period to the present day. In English.

178A-B-C. Italian Cinema
(4-4-4) STAFF

Prerequisite: upper-division standing.

Not open for credit to students who have completed Italian 178.

Contemporary Italian cinema from neorealism to the present.

A. La commedia all'italiana
B. Mafia, camorra, 'ndrangheta
C. Gli anni di piombo

179X. Fiction and Film in Italy
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed Italian 152.
An analysis of the relationship between narrative fiction and film in modern Italy ranging from the great works of Antonioni, Visconti, and Rossellini to recent versions of "literary classics" shot for television. In English.

180Z. Italian Cinema
(4) LAWTON
Prerequisite: Writing 2 and 50.
A survey of the major trends and directors in Italian cinema since World War II. Directors to be studied include: Rossellini, De Sica, Visconti, Fellini, Antonioni, and Rosi. In English.

199. Independent Studies in Italian
(1-5) STAFF
Prerequisites: upper-division standing; completed at least two upper-division courses in Italian.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Individual investigations in literary fields.

199RA. Independent Research Assistance
(1-5) STAFF
Prerequisites: upper-division standing; completed at least two upper-division courses in Italian; consent of instructor.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Independent research, under the supervision of a consenting faculty member.

GRADUATE COURSE

596. Directed Reading and Research
(1-6) STAFF
Prerequisites: graduate standing and consent of instructor.
May be repeated for credit.
Individual tutorial.

French and Italian Courses Taught in English

Courses for which no knowledge of French or Italian is required. See course descriptions above.

French: see 67X, 68X, 70X, 70Y, 70Z, 106X, 108X, 113X, 120X, 121X, 122X, 123X, 130X, 131X, 132X, 133X, 135X, 136X, 137X, 138X, 139X, 141X, 142X, 145X, 146X, 147X, 160X, 163X, 164X, 166X, 167X, 169AX, 169BX, 170X, 171AX-ZX, 171X, 172X, 174X, 175X, 176X, 178X, 178Y, 178Z, 180X, 181X, 183X, 190X, 192X, 193X, 194X, 196X.

Italian: see 20X, 21Y, 30Z, 111X, 112X, 113X, 114X, 124X, 125X, 138AX-ZX, 142X, 143X, 144AX-ZX, 146X, 147X, 148X, 149X, 153X, 161X, 179X, 180Z.

Geography

Department of Geography,
Division of Mathematical, Life, and Physical Sciences,
Ellison Hall 3611;
Telephone (805) 893-3663
Web site: www.geog.ucsb.edu
Department Chair: Michael Goodchild

Faculty

Oliver Chadwick, Ph.D., University of Arizona, Professor (pedology, soil geomorphology, soil geochemistry, quaternary geology, organic and mineral fluxes during soil, atmosphere, water and vegetation interaction)

Richard L. Church, Ph.D., Johns Hopkins University, Professor (facilities location and related computational algorithms, urban and regional modeling/planning, water resources)

Keith Clarke, Ph.D., University of Michigan, Professor (cartography and geographic information systems)

Helen Couclelis, Ph.D., Cambridge University, Professor (spatial cognition and behavioral geography, urban and regional theory and modeling, planning, the philosophy of science)

Frank Davis, Ph.D., Johns Hopkins University, Professor (biogeography, plant ecology, remote sensing, information systems and conservation planning)

Tommy Dickey, Ph.D., Princeton University, Professor (atmosphere-ocean interactions and upper ocean mixing; turbulence and internal waves)

John E. Estes, Ph.D., UC Los Angeles, Professor (remote sensing, emphasizing sensor and information systems, land-use study, regional resource base determination and evaluation)

Catherine Gautier, Ph.D., University of Paris, Professor (earth radiation budget and cloud processes, large-scale hydrology and surface/atmosphere interaction, radiative transfer and remote sensing, global climate processes and earth system science)

Reginald G. Golledge, Ph.D., University of Iowa, Professor (spatial cognition, behavioral geography and decision making)

Michael F. Goodchild, Ph.D., McMaster University, Professor (spatial analysis and geographic information systems)

Hugo A. Loaiciga, Ph.D., UC Davis, Professor (water resources, surface and groundwater hydrology)

Leal Mertes, Ph.D., University of Washington, Associate Professor (fluvial geomorphology, remote sensing of wetlands, long-term evolution of large river systems, Amazon River)

Joel Michaelsen, Ph.D., UC Berkeley, Professor (climatology/meteorology, climate change, marine resources, temporal and spatial statistics)

Daniel Montello, Ph.D., Arizona State University, Associate Professor (spatial perception, cognition and behavior, cognitive issues in cartography and GIS, spatial aspects of social behavior, environmental psychology and behavioral geography)

James Proctor, Ph.D., UC Berkeley, Associate Professor (environmental and cultural geography, environmental philosophy, geographic thought, geographic education)

Dar Roberts, Ph.D., University of Washington, Associate Professor (remote sensing of vegetation and soils, geobotany and spectroscopy, geology, ecology and ecophysiology)

David Siegel, Ph.D., University of Southern California, Professor (physical oceanography, numerical modeling and supercomputing, bio-optical oceanography, turbulence, air-sea interaction and theoretical ecology)

Terence R. Smith, Ph.D., Johns Hopkins University, Professor (spatial data processing, spatial analysis, spatial databases, knowledge-based approaches to geographic information systems)

Stuart Sweeney, Ph.D., University of North Carolina, Chapel Hill, Assistant Professor (urban and regional modeling/planning, human migration; local economic development, spatial statistics)

Libe Washburn, Ph.D., UC San Diego, Professor (physical oceanography, ocean turbulence and mixing processes, ocean bio/optics, air-sea interaction and marine pollution)

Emeriti Faculty

Raymond C. Smith, Ph.D., Stanford University, Professor Emeritus

Waldo R. Tobler, Ph.D., University of Washington, Professor Emeritus

Affiliated Faculty

Thomas Dunne, Ph.D. (School of Environmental Science and Management)

John M. Melack, Ph.D. (Ecology, Evolution, and Marine Biology)

Jeff Dozier, Ph.D. (The Donald Bren School of Environmental Science and Management)

The geography major is designed to provide a fundamental background for students seeking an interdisciplinary understanding of the world; to offer training for careers in business, government, and teaching; to prepare students for graduate studies in theoretical and applied work in geography; and to prepare students to conduct original research.

The program is organized around systematics courses and a range of quantitative and computer techniques, and students will normally acquire familiarity with elements of both. Students interested in becoming professional geographers are encouraged to develop additional expertise in one or more related disciplines. Specific individual programs may be worked out in consultation with advisors.

Undergraduate advisors are available for consultation throughout the year. A faculty member acts as advisor to graduate students and is available for consultation, by appointment, throughout the year. Prospective or new students should speak with an advisor when they arrive on campus.

Students with a bachelor's degree in geography who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Program

Bachelor of Arts—Geography

Preparation for the major. Geography 3A-B; Geography 5. One course from either of these two groups: A. EEMB 20 or MCDB 20 or EEMB 21 or Geology 2 or Natural Science 1C. B. Anthropology 2 or 5; Economics 1 or 2; Environmental Studies 3 or Political Science 7 or Psychology 1 or Sociology 1. Also required, one course from PSTAT 5A or EEMB 30 or Psychology 5 or Sociology 3. Strongly recommended: Geography 13, one course in computer programming and
Geology 17.

Upper-division major. Thirty-six upper-division units in geography are required, distributed as follows:

A. 8 units from systematics courses: Geography 102, 104, 105, 108, 110, 112, 114A, 114AL, 114B, 114BL, 116, 116L, 119, 120, 123, 124, 133, 134, 143, 144, 146, 153A-C-D-E, 162A, 162AL, 163, 165, 166, 167, 168, 169, 170, 170L, 180, 185A-B-C-D, 187, 188, 190, 195, 198, 199, 199RA (consult advisor for unit limitations on 198/199 courses);

B. 8 units from techniques courses: Geography 103, 115A-B-C-AL-BL-CL, 117B, 118, 128, 136, 138, 151, 172, 172L, 176A-B-C-BL-CL, 181, 184A-B, 191, 191L, 193 (only 4 units of 193 may be applied to the major);

C. 4 units from regional courses: Geography 148, 149, 150, 154, 155, 156, 157, 158, 159, 160;

D. Upper-division geography electives to bring unit total to 36. A maximum of 8 upper-division units from a list of approved alternatives or by petition.

Bachelor of Science—Physical Geography

Preparation for the major. Fifty-three lower-division units are required, as follows. Geography 3A-B, 5; Mathematics 3A-B-C; Physics 6A-B-C or Physics 1, 2, 3, 3L, 4, 4L, PSTAT 5A or EEMB 30; Chemistry 1A-AL. In addition, students must select a minimum of 12 units from the following courses: Chemistry 1B-BL, 1C-CL; Geology 2; MCDB 1A-AL. Strongly recommended: Mathematics 5A-B-C; Computer Science 12; Geography 13; and any additional courses from those listed above.

Upper-division major. Forty-six upper-division units are required, as follows. Ten units from Geography 102, 172, 172L. Twelve units from Geography 115A-AL-B-BL-C-CL, 118, 128, 151, 176A-B-C-BL-CL, 184A-B. Twelve units from Geography 104, 110, 112, 114A, 114AL, 134, 167. Twelve units from Geography 114B, 114BL, 116, 1116L, 119, 123, 133, 136, 144, 158, 160, 162A, 162AL, 163, 165, 166, 168, 169, 170, 170L, 185D.

Note: No units from Geography 193, 198, or 199RA will be counted toward a B.S. degree in physical geography.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

The Geography Department offers specialized graduate training leading to the M.A. and Ph.D. degrees in a selection of areas including the following:

Earth System Science (ESS): This systematic area emphasizes the measurement, analysis, and modeling of hydrologic, atmospheric, oceanic, and terrestrial systems and the interaction between systems. A large proportion of the problems addressed by researchers in ESS involve three common elements: large regional issues; mathematical and computational modeling; and large, spatially-indexed datasets.

Human-Environment Relations (HER): This systematic area covers the major components of human geography offered by the department, including human spatial behavior, spatial decision making and decision support, urban and regional modeling, planning and policy, human movement and transportation systems, resource and environmental management, environmental ethics, and human response to the changing environment.

Modeling, Measurement and Computation (MMC): This area involves the investigation of those sets of techniques from the areas of analysis, statistics and computation that are particularly well-suited to the modeling of the complex, geographic phenomena that are the subject of investigation in both ESS and HER. Important sub-areas include numerical modeling, spatial statistics, remote sensing, computational modeling and database systems (including GIS) and visualization, all of which are increasingly dependent on knowledge of computational theory and practice.

Admission

In addition to the university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB," the department requires a high undergraduate grade-point average, particularly during the last two years of study. An undergraduate degree in geography is not required. Applicants with strong academic backgrounds in specific systematic study areas are strongly encouraged to apply. All applicants are required to submit verbal, quantitative, and analytical Graduate Record Examination scores; total combined scores on the verbal and quantitative portions of the exam should exceed 1100. Some undergraduate preparation in mathematics, statistics and computer programming is encouraged.

Students applying to the department with an undergraduate degree only are encouraged to apply for the M.A./Ph.D. program if the Ph.D. is their final degree objective. Upon completion of the M.A. thesis, the student's thesis committee chair will submit a recommendation to the department Graduate Committee regarding admission to the Ph.D. program. The Graduate Committee makes the final decision on admission or denial for those M.A. students wishing to continue into the Ph.D. program.

Applications are accepted for Fall only; the application deadline is January 15.

Tommy Dickey

PROFESSOR, GEOGRAPHY

Growing up in Indiana, geography professor Tommy Dickey never saw an ocean until he graduated from college. Even so, tornadoes, hurricanes, monsoons, and anything else related to the ocean and atmosphere fascinated him. After receiving undergraduate degrees in physics and math, he joined the U.S. Coast Guard and met people doing work in oceanography. Even more fascinated by the oceans, he returned to graduate school at Princeton University to study geophysical fluid dynamics, the dynamics of the atmosphere, and the ocean.

"Oceanography will provide some fantastic intellectual voyages."

Like other scientists, he brings his research into the classroom to expose his students to "real-time, real life stuff." He's studied hurricanes near Bermuda and Cape Cod, monsoons in the Arabian Sea, pollution off the coasts of California and Hawaii, and El Niño and La Niña conditions in the equatorial Pacific. His research group utilizes new technologies including robotic underwater vehicles.

"Oceanography is about to be revolutionized by new technologies and computer modeling," Dickey says. "It will provide some fantastic intellectual voyages for future generations."

Master of Arts—Geography

Degree Requirements

The M.A. degree may be obtained under either of two plans. Plan 1 requires 34 units, at least 12 in 200-level geography courses exclusive of Geography 201, 200A, B, or C. A thesis is required. Plan 2 requires 46 units, at least 22 in 200-level geography courses exclusive of Geography 201, 200A, B, or C, and a final examination assessing general knowledge of geography and knowledge of the candidate's chosen specialty area.

Doctor of Philosophy—Geography

Degree Requirements

All Ph.D. students must major in a systematic area of study and are expected to develop great depth in techniques areas but will be tested only in one technical area. No foreign language is required.

All doctoral candidates must serve as teaching assistants for at least one quarter.

Students will be required to take a diagnostic interview to assist in the preparation for undertaking a doctoral program in geography. Before advancement to candidacy, students must pass both a written and an oral qualifying examination and secure approval of a dissertation proposal.

Following completion of doctoral research, students will prepare a dissertation which must be approved by each member of their Ph.D. committee.

Before approving the dissertation, the student's doctoral committee may call in the candidate for an open oral defense to clarify segments of the dissertation and/or acquaint the candidate with the nature of any further work that needs to be undertaken prior to approval of the dissertation. The department encourages its doctoral candidates to present the results of their doctoral research to the university community in a public lecture.

Optional Ph.D. Emphasis in Cognitive Science

Students pursuing a Ph.D. in this department may petition to add an emphasis in cognitive science. The interdisciplinary program in cognitive science involves faculty from the Ph.D. programs in anthropology, computer science, education, English, electrical and computer engineering, geography, linguistics, psychology, and sociology. Its goal is to give students an appreciation of the interdisciplinary study of thinking, perception, and intelligent behavior, as determined jointly by the nature of the environment and by the internal architecture of the intelligent agent, whether human, animal, or machine. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in cognitive science must fulfill the following requirements in addition to the requirements of the Ph.D. in their home department: (1) participation for at least three quarters in proseminar Interdisciplinary 200; (2) completion of at least three cognitive science elective courses with one each in three different departments; (3) completion of either (a) a research project, completed before the dissertation, resulting in a publishable paper, or (b) an extramural grant proposal for a study in cognitive science suitable for submission to an identified granting agency; (4) presentation of a research paper in a suitable academic forum, such as an emphasis or departmental colloquium, or a professional meeting; and (5) a Ph.D. dissertation centrally focused on a question emerging from cognitive science with at least two committee members representing faculty participating in the cognitive science interdisciplinary emphasis.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences

Students pursuing a Ph.D. in this department may petition to add an interdisciplinary emphasis in quantitative methods in the social sciences (QMSS). This new interdisciplinary emphasis involves faculty from the Ph.D. programs in communication, economics, education, geography, political science, psychology, sociology, and statistics and applied probability. The areas of specialization of the participating faculty include advanced regression modeling techniques, multivariate statistics, bootstrap estimation methods, demography, econometrics, psychometrics, social network theory, mathematical psychology, spatial statistics, survey research, and educational and psychological assessment. The QMSS emphasis helps students to attain the competencies needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methodologies, and participation in interdisciplinary colloquia and research projects.

Each admitted student will develop, with his or her advisor, an individual contract listing the QMSS requirements to be completed. The contract must include the following:

Two quarters of calculus, one quarter in linear algebra, and a one-year statistics sequence (These requirements can be waived if equivalent courses have already been completed).

Attendance for at least three quarters at the ongoing QMSS seminar series, including presentation of at least one paper.

Completion of at least three quantitative methods courses (excluding those listed above) or at least two of which are outside the student's home department.

A Ph.D. dissertation that is centrally focused on an issue that is appropriate to the QMSS emphasis. The dissertation may make a contribution to methodological theory or may involve an advanced or innovative application.

A dissertation committee that includes at least one QMSS faculty member from outside the student's home department.

Consult the department for additional information.

UCSB/San Diego State University Joint Ph.D. Program

The Departments of Geography at San Diego State University (SDSU) and UCSB have joined resources to offer a distinctive doctoral program. It brings together the faculties and facilities of two outstanding institutions. Students will spend a minimum of one year on each campus and will normally finish their work at SDSU. The joint program will complement but not duplicate the existing Ph.D. program at UCSB, which will continue to function separately from the joint doctoral program. Applicants should see the joint doctoral program coordinator at SDSU.

Geography Courses

LOWER DIVISION

3A. Physical Geography: Oceanic and Atmospheric Processes
(4) SIEGEL, DICKEY, MICHAELSON
Not open for credit to students who have completed Geography 3. Lecture, 3 hours; discussion, 1 hour.
Study of basic processes that determine flows of energy through the atmosphere and oceans. Distribution and characteristics of major atmospheric and oceanic features and interactions between them. Interrelationships between human societies and oceanic and atmospheric variability.

3B. Physical Geography: Land Surfaces Processes
(4) ROBERTS, SMITH, DAVIS
Not open for credit to students who have completed Geography 3. Lecture, 3 hours; discussion, 1 hour.
Study of the interactions between water, landforms, soil, and vegetation that create and modify the surface of the earth. Impacts of physical environment on human societies and humans as agents of environmental change.

5. Introductory Human Geography
(4) COUCLELIS, CHURCH, GOLLEDGE, MONTELLO, PROCTOR, SWEENEY
Lecture, 3 hours; discussion, 1 hour.
Survey of spatial differentiation and organization of human activity and human interaction with the Earth's biophysical systems. Sample topics include human spatial decision-making behavior, migration, population growth, economic development, industrial location, urbanization, and human impacts on the natural environment. (F,W,S)

9. Water and The West
(4) LOAICIGA, CHURCH
Lecture, 3 hours; discussion, 1 hour.
Conquest, colonization, growth, and decline in the West in light of the use of water. Past, present, and future of water use in the arid West, with emphasis on water development, environmental impact, economic sustainability, institutional reform, and politics.

10. Geography of World's Natural Resources
(4) LOAICIGA
Lecture, 3 hours; discussion, 1 hour.
Survey of soil, water, forest, wildlife, energy, marine, and mineral resources; management in the United States and the world at large.

12. Maps and Charts
(4) CLARKE
Lecture, 3 hours; laboratory, 3 hours.
Map and chart reading and use. Scales, introduction to grid systems, projections. Sources of map information and practical map measurement.

13. Introduction to Computing in Geography
(2) MICHAELSON
Lecture, 1 hour; laboratory, 3 hours.

Introduction to geography computing environment. Basic UNIX commands, file structures, and filters. X-windows, World Wide Web and basic software tools.

UPPER DIVISION

102. Introduction to Environmental Optics in Physical Geography
(5) GAUTIER, DOZIER, ROBERTS

Prerequisites: Geography 3A-B and 115A.

Recommended preparation: high school trigonometry. Lecture, 3 hours; discussion, 2 hours.

Basic physical principles of electromagnetic radiation in the environment and their application to physical geography and remote sensing. Radiative transfer in atmosphere, oceans, snow and ice, inland waters, rock, soil, and vegetation. Spectral signatures in remote sensing. (W)

104. Physical Geography of the World's Oceans
(4) WASHBURN, SIEGEL

Prerequisite: Geography 3A. Lecture, 3 hours; discussion, 1 hour.

Introduction to the processes which control the circulation of the world's oceans. Topics include: wind driven circulation, thermohaline circulation, water masses, waves, and tides. (F)

105. Introduction to Spatial Decision Making and Behavior
(4) GOLLEDGE

Recommended preparation: Geography 5 or equivalent. Lecture, 3 hours, laboratory, 1 hour.

Gateway for the spatial decision making and behavior field. Includes environmental cognition; consumer spatial behavior; migration; space-time budgeting; destination and mode choice; risk and hazard perception; spatial preference. Laboratory sessions involve locational and city management simulation games. (W)

108. Urban Geography
(4) STAFF

Prerequisite: Geography 5. Lecture, 3 hours; discussion, 1 hour.

Introduction to the study of the economic geography of cities and regions and its relation to planning: urbanization, internal structure of cities, settlement systems, regional growth and development, migration, transportation, housing. (F)

110. Introduction to Meteorology
(4) MICHAELSEN

Prerequisite: Geography 3A. Lecture, 3 hours; discussion 1 hour.

An introduction to the dynamics of the earth's atmosphere. Topics include: energy exchange mechanisms, energy balance, condensation and precipitation processes, the dynamics of pressure and wind systems, and the distributions of weather disturbances. (W)

112. Environmental Hydrology
(4) LOAICIGA

Prerequisites: Geography 3A and 3B. Lecture, 3 hours; laboratory, 1 hour.

Nature of water cycle with emphasis on relationships among climatic, physiographic, surface water, and ground water phenomena. Environmental impact of water development based on physical hydrologic principles. (F)

114A. Biogeochemistry of the Soil Environment
(4) CHADWICK

Prerequisites: Chemistry 1A-B; and, Geography 3B or Geology 2; and, concurrent enrollment in Geography 114AL.

Same course as Environmental Studies 114A. Lecture, 3 hours.

Introduction to the chemical, hydrological, and biological characteristics of soils, their global distribution, and their response to management.

114AL. Soil Science Lab
(1) CHADWICK

Prerequisite: concurrent enrollment in Geography 114A.

Same course as Environmental Studies 114AL. Laboratory, 3 hours.

Field and laboratory projects designed to provide an understanding of soil-landscape distribution, soil morphology, and the physical and chemical properties that influence management decisions.

114B. Soil Genesis and Classification
(4) CHADWICK

Prerequisites: Geography 114A; and, concurrent enrollment in Geography 114BL.

Same course as Environmental Studies 114B.

Recommended preparation: Geological Sciences 117.

Introduction to the chemical, physical, and biological processes that produce soil and influence their management. The morphology, genesis, classification, and global distribution of soil will be emphasized.

114BL. Sampling and Analysis of Soils Lab
(1) CHADWICK

Prerequisite: concurrent enrollment in Geography 114B.

Same course as Environmental Studies 114BL.

A chance to gain knowledge of soil sampling and laboratory procedures. Labs cover field site selection, soil description, sampling, laboratory preparation of soil samples, and selected chemical and physical analyses.

115A. Geographic Photo Interpretation
(4) ESTES

Prerequisites: Geography 3A and 3B (may be taken concurrently); and, concurrent enrollment in Geography 115AL.

Recommended preparation: introductory botany and geology. Lecture, 3 hours.

Interpretation of physical and cultural geographic phenomena as recorded by orbital and aerial sensing systems with emphasis on conventional aerial photography. (F)

115AL. Laboratory in Geographic Photo Interpretation
(1) ESTES

Prerequisites: Geography 3A and 3B (may be taken concurrently); and, concurrent enrollment in Geography 115A.

Recommended preparation: introductory botany and geology. Laboratory, 4 hours.

Laboratory analysis of aerial and space photographs. (F)

115B. Geographic Remote Sensing Techniques
(4) MERTES

Prerequisites: a minimum grade of C in Geography 115A-AL; and, concurrent enrollment in Geography 115BL.

Recommended preparation: Geography 13. Lecture, 3 hours.

A basic understanding of the acquisition and nature of digital image data and the tools required to process and analyze from multispectral remote sensing systems. Techniques include color display, contrast enhancement, ratios, and supervised classification. (W)

115BL. Laboratory in Geographic Remote Sensing Techniques
(1) MERTES

Prerequisites: Geography 115A-AL; concurrent enrollment in Geography 115B.

Recommended preparation: Geography 13. Laboratory, 2 hours.

Laboratory analysis of digital image data from primarily Landsat and SPOT imaging systems. Interactive manipulation and analysis of images on computers using a variety of image processing software packages. (W)

115C. Intermediate Geographic Remote Sensing Techniques
(4) MERTES

Prerequisites: a minimum grade of C in Geography 115B-BL; and, concurrent enrollment in Geography 115CL.

Recommended preparation: Geography 13. Lecture, 3 hours.

Intermediate instruction in the interpretation of environmental phenomena recorded in digital data formats by remote sensing instruments. Emphasis on learning the more advanced techniques of image restoration, image enhancement, image transformation, and both supervised and unsupervised classification. (S)

115CL. Laboratory in Intermediate Geographic Remote Sensing Techniques
(1) MERTES

Prerequisites: Geography 115B-BL; and, concurrent enrollment in Geography 115C.

Recommended preparation: Geography 13. Laboratory, 4 hours.

Interactive computer manipulation of digital data in laboratory exercises designed to develop skills in advanced techniques of image processing. Both commercial and public-domain software packages employed. (S)

116. Groundwater Hydrology
(4) LOAICIGA

Prerequisites: Geography 3A-B; and, concurrent enrollment in Geography 116L.

Same course as Geological Sciences 173. Lecture, 3 hours.

Analysis of groundwater flow regimes; steady-state and transient systems, and geologic controls. Basic aquifer properties and yield. Surface-water/groundwater interaction and fundamentals of groundwater quality. Field trips and experimental laboratory demonstrations. (W)

116L. Lab for Groundwater Hydrology
(1) LOAICIGA

Prerequisites: Geography 3A-B; and, concurrent enrollment in Geography 116.

Same course as Geological Sciences 173L. Laboratory, 2 hours.

Basic groundwater flow experiments; Hele-Shaw flow simulations, hydraulic conductivity measurement, groundwater quality determination (Ph, DO, EC), and field trips for base flow measurement. (W)

117B. Research Methods in Human Geography
(4) MONTELLO

Prerequisite: Geography 5.

Instruction in scientific research methods for human geography. Topics include: scientific method, sampling, experimental and nonexperimental design, qualitative methods, surveys, census data, modeling, data representation, publication, research ethics.

118. Production Cartography
(4) CLARKE

Prerequisite: Geography 176A.

Not open for credit to students who have completed Geography 118B. Lecture, 2 hours; laboratory, 4 hours.

Introduction to cartographic requirements analysis, map design, digital cartographic technology, geographic data compilation, color theory, typography, and digital cartographic research. Lab work provides students with hands-on experience with desktop graphics design work stations and advanced cartographic output devices. (S)

119. Climatic Change and Its Consequences
(4) MICHAELSEN

Prerequisite: a grade of C or better in Geography 110. Lecture, 3 hours; laboratory, 1 hour.

Mechanisms and processes which produce climate change. Methods for reconstructing paleo-climates. Impacts of past climate change on human societies.

120. Landsurface Transport Phenomena in Physical Geography
(4) T. SMITH

Prerequisite: Geography 3A and 3B. Lecture, 3 hours; discussion, 1 hour.

Basic transport phenomena and landsurface forms associated with gravitational forces and running water. This course covers: the flow of water over landsurfaces; the erosion, entrainment, and transport of materials; the evolution of fluvial landsurfaces in response to these processes.

123. Contaminant Hydrology
(4) LOAICIGA

Prerequisite: Geography 3B.

Recommended preparation: introductory calculus, introductory physics, and introductory chemistry.

Study of physical and chemical processes which govern the transport and fate of contaminants in sub-surface waters, including soil water, aquifers, and fractured rocks. (S)

124. Natural Resource Conservation, Modeling, and Management
(4) PROCTOR

Prerequisite: Geography 3A-B. Lecture 3 hours; discussion, 1 hour.

Survey of principle theoretical and applied issues surrounding natural resource utilization, stressing major debates over resource conservation and development, theory and methods of resource modeling, and principles of resource management. Contemporary case studies are cited.

128. Analytical and Computer Cartography
(4) CLARKE

Prerequisite: Geography 176A. Lecture, 3 hours; laboratory, 2 hours.

Using computers to create and analyze maps. Coding, storing and representing geographical data. Accessing spatial data over the Internet. Map data structures and transformations. Design and programming issues in map production.

133. Tropical Meteorology
(4) GAUTIER

Prerequisite: a grade of C or better in Geography 110. Lecture, 3 hours; laboratory, 1 hour.

Description of tropical atmosphere. High and low frequency variability: hurricanes, monsoon, El Niño, satellite observations, and modeling.

134. Earth System Science
(4) GAUTIER

Prerequisite: Geography 3A

Recommended preparation: two upper-division physical geography courses. Lecture, 3 hours; laboratory, 2 hours.

Description of various components of earth system: climate and hydrologic systems, biogeochemical dynamics, ecological dynamics. Human interaction and global change. Observations and modeling of earth system. (S)

136. Remote Sensing of the Oceans
(4) WASHBURN

Prerequisite: Geography 104. Lecture, 3 hours; discussion 1 hour.

Survey of physical and biological oceanography from remote sensing perspective. Discussion of sensor systems, platforms, and methodologies both in current use and planned. Topics include: remote sensing fundamentals, ocean color, sea surface temperature measurement, and active remote sensing techniques for oceanography.

138. Remote Sensing of the Atmosphere: An Introduction
(4) GAUTIER

Prerequisite: Geography 102. Lecture, 3 hours.

Atmospheric physics and dynamics from a remote sensing perspective. Clouds, precipitation, temperature, and humidity profiles. Weather patterns and systems.

143. Human Migration
(4) SWEENEY

Prerequisite: Geography 5.

An introduction to key research areas and issues in the analysis of interregional and international migration. Emphasis on U.S. interstate and interregional migration, immigration, and historical patterns of population flows and how they have shaped the composition of the U.S. population.

144. Forms, Process, and Human Use of Rivers
(4) LOAICIGA, MERTES, KELLER

Prerequisites: Mathematics 3A-B or 34A-B.

Same course as Environmental Studies 144. Lecture, 3 hours; laboratory, 3 hours.

Basic understanding of fluvial (river) hydrology. In-depth evaluation of channel form and fluvial processes and impact of human use on rivers. (W; offered odd-numbered years)

146. Introduction to Transportation Systems Analysis
(4) CHURCH

Prerequisites: Geography 5 and Economics 1. Lecture, 3 hours.

Introduction to the analysis of inter- and intra-city passenger and freight movements. Geographic and economic concepts are used to develop predictive and optimal design/maintenance models for the transportation system. Applications of the models are stressed.

148. California
(4) STAFF

Lecture, 3 hours.

The unique landscapes of California and the physical, cultural, and biotic processes which have produced them. (F)

149. The California Channel Islands
(4) STAFF

Prerequisites: MCDB 5B or EEMB 5B or 20; and, Geography 3A-B, or Geological Sciences 2 or Environmental Studies 2.

Same course as Environmental Studies 111.

Recommended preparation: introductory chemistry and biology. Lecture, 3 hours.

Discussion of biological, geological, ecological, anthropological, and oceanographic characteristics of the Channel Islands area as well as the management and human uses of this region. Emphasis on islands and ocean waters off Southern California. (S)

150. Geography of the United States
(4) ESTES

Lecture, 3 hours.

Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of the United States. (W)

151. Computational Methods for Watershed Analysis
(5) MERTES

Prerequisites: Geography 176A-B-C; or Geography 115A-B-C; or, Geography 144 or Environmental Studies 144; and Geography 112.

Recommended preparation: Geography 13. Lecture 3 hours; laboratory 3 hours.

Geographic Information Systems are the framework for implementing the stratification techniques of watershed analysis. Interactive computer manipulation of digital data in laboratory exercises will allow quantification and interpretation of the land use, hydrology, and geomorphology of the watersheds selected for study.

153A. Behavioral Geography
(4) GOLLEDGE, MONTELLO

Prerequisite: Geography 5.

Recommended preparation: Geography 105. Lecture, 3 hours; laboratory 1 hour.

This course examines aspects of the human-environment interface, emphasizing behavioral processes in spatial contexts including spatial choice and decision making, consumer behavior, migration and other episodic movements, time budgets, spatial cognition, and cognitive mapping.

153C. Environmental Perception and Cognition
(4) COUCLELIS, GOLLEDGE, MONTELLO

Prerequisite: Geography 5.

Same course as Psychology 156. Lecture, 3 hours; laboratory 1 hour.

Research and theory on human perception and cognition of environments. Topics include spatial perception, spatial learning, knowledge structures, navigation and wayfinding, language and spatial cognition, map use, the spatial skills of special populations, and other issues.

153D. Spatial Decisions in Retailing
(4) GOODCHILD, CHURCH

Prerequisite: Geography 5.

Recommended preparation: Geography 105. Lecture, 3 hours.

Applications of spatial decision making and behavior to retail systems: site selection, site evaluation, trade area estimation, and spatial dimensions of retailing.

153E. The Geography of Everyday Life
(4) GOLLEDGE

Prerequisite: Geography 5.

Recommended preparation: Geography 105. Lecture, 3 hours; discussion, 1 hour.

People have a common sense understanding of geographical environments. This course explores such understandings, formalizes the spatial dimensions and relations of everyday activities, and relates them to human spatial abilities.

154. Geography of Australia and New Zealand
(4) GOLLEDGE

Lecture, 3 hours.

Characteristics and problems of Australia and New Zealand. Discussions of physical, economic, cultural, and regional problems and potentials.

156. Great Cities of The World
(4) COUCLELIS

Prerequisite: Geography 5 or 108. Lecture, 3 hours; discussion, 1 hour.

Analysis of significant urban development processes and outcomes around the world. Presentation of major cities representative of different geographic regions, cultures, and historical circumstances, and examination of their role in the context of a "Global Society." (S)

157. Jungles, Deserts, and Famine: The Geography of Africa
(4) PROCTOR

Prerequisite: upper-division standing. Lecture, 3 hours.

Overview of climate, geology, soils, vegetation, human culture, and management in tropical rainforests, grasslands, and deserts. Physical and cultural processes leading to famines, expanding deserts, deforestation, war, migration, and other contemporary African problems.

158. Geography of the California Current
(4) SIEGEL

Prerequisites: Geography 3A-B.

Recommended preparation: Geography 104. Lecture, 3 hours; discussion, 1 hour.

Introduction to the marine resources off the California coast. The interplay of oceanographic, climatic, biogeochemical and geologic factors and the influences of humankind will be addressed. Topics include: climate, circulation, biogeography, fisheries, marine mammals, petroleum, pollution, and exploration history.

159. Geography of Europe
(4) COUCLELIS

Lecture, 3 hours.

A systematic approach to the study of the human and physical resources of Europe. Special emphasis placed on the spatial aspects of urban, economic, and social processes. (S)

160. Regional Oceanography Around the World
(4) DICKEY

Prerequisite: Geography 104.

Descriptions and comparisons of four distinct ocean regions: Gulf Stream, equatorial Pacific, Southern Ocean, and Arabian Sea. Examination of various aspects of the physics, chemistry and biology of the regions and their importance.

162A. Water Pollution
(4) LOAICIGA

Prerequisites: concurrent enrollment in Geography 162AL.

Same course as Environmental Studies 162A. Not open for credit to students who have completed Geography 162.

Human contamination of aquatic environments with emphasis on surface waters, groundwaters and oceans. Water quality characteristics, modeling and modifications. Legislative framework and methods of pollution control. (S)

162AL. Laboratory in Water Pollution
(1) LOAICIGA

Prerequisites: concurrent enrollment in Geography 162A.

Same course as Environmental Studies 162AL. Not open for credit to students who have completed Geography 162L.

Field trips to water treatment plants, labs on water sampling and analysis; PH, DO, BOD, hardness, EC tests. (S)

163. Ocean Circulation
(4) WASHBURN, SIEGEL

Prerequisite: Geography 104.

Not open for credit to students who have completed Geography 163A. Lecture, 3 hours.

Examination of the dynamical processes controlling the general circulation of the ocean. Quantitative methods are used to explain wind and buoyancy-driven circulation patterns and the ocean's role in global climate. (S; offered in even-numbered years)

165. Waves and Tides in the Ocean
(4) SIEGEL, WASHBURN

Prerequisite: Geography 104.

Lecture, 3 hours; discussion, 1 hour.

Examination of waves and tides in the ocean. Topics include surface waves, wave generation, internal waves, tides and tide raising forces. Measurement techniques are also discussed. (S; offered in even-numbered years)

166. Physical Climatology
(4) MICHAELSEN

Prerequisite: a grade of C or better in Geography 110.

Recommended preparation: Mathematics 3C or equivalent. Lecture, 3 hours; laboratory, 1 hour.

Study of the processes which create the earths climate. Flows of energy and material in the atmosphere and interactions with the surface. Large-scale atmospheric circulation patterns. Spatial and temporal variability. Climate modeling

167. Biogeography: The Study of Plant and Animal Distributions
(4) DAVIS

Prerequisite: Geography 3B; or a prior course in EEMB or MCDB. Lecture, 3 hours; discussion, 1 hour.

Basic processes governing geographic distribution patterns of biota, including migration, evolution, isolation, and endemism. Biogeographic regions and their histories. Emphasis on plants and plant geography. (W; offered in odd-numbered years)

168. Surface Climate and Water Relations of Soils and Vegetation
(4) DAVIS

Prerequisite: Geography 102 or 110 or 112 or 114.

Analysis of the sources, sinks, and cycling of water, nutrients and water vapor between soils, vegetation, and the lower atmosphere. Prediction of regional vegetation productivity and characteristics on the basis of climate, nutrient and water availability.

170. Introduction to Vegetation Analysis
(4) DAVIS

Prerequisites: Geography 3B and 167. Lecture, 3 hours.

Theory and application of natural vegetation classification, ordination, mapping, and inventorying. Includes application of remote sensing, field sampling techniques and data analysis. (S; offered in odd-numbered years)

170L. Laboratory in Vegetation Data Analysis
(1) DAVIS

Prerequisite: Geography 3B and 167; concurrent enrollment in Geography 170. Laboratory, 1 hour.

Calculation and computation methods as appropriate to Geography 170. Implementation of computer programs of vegetation analysis. (S; offered in odd-numbered years)

172. Introduction to Geographical Data Analysis
(3) MONTELLO, SWEENEY

Prerequisites: PSTAT 5A; concurrent enrollment in Geography 172L. Lecture, 3 hours.

Introduction to statistical analysis of geographical data. Descriptive and inferential statistics, including means tests, univariate correlation/regression, and spatial statistics. (W)

172L. Laboratory in Introductory Geographical Data Analysis
(2) MONTELLO, SWEENEY

Prerequisites: PSTAT 5A; concurrent enrollment in Geography 172. Laboratory, 3 hours.

Introduction to computational methods for statistical analysis of geographical data. Experience with statistical software. (W)

176A. Introduction to Geographic Information Systems
(4) CLARKE

Recommended preparation: Geography 12 and 13. Lecture, 2 hours; laboratory, 2 hours.

Introduction to modern spatial data processing, development, implementation, and functions of geographic information systems; relations between GIS and remote sensing; and applications of geographic information systems to a variety of environmental issues. (F)

176B. Technical Issues in Geographic Information Systems
(4) CLARKE, GOODCHILD

Prerequisites: a minimum grade of C in Geography 176A and 13; concurrent enrollment in Geography 176BL. Lecture, 3 hours.

Study of the technical issues underlying Geographic Information Systems, including coordinate systems and analytic geometry, database models and structures, algorithms and analytical procedures. (W)

176BL. Lab in Geographic Information Systems I
(1) CLARKE, GOODCHILD

Prerequisites: Geography 176A and 13; concurrent enrollment in Geography 176B. Laboratory, 3 hours.

Laboratory analysis of digital geographic information from physical and social sources, emphasizing the use of standard geographic information system software to illustrate techniques of spatial analysis, map digitizing, digital map display, and decision support.

176C. Application Issues in GIS
(4) CLARKE, GOODCHILD

Prerequisites: a minimum grade of C in Geography 176A and 13; concurrent enrollment in Geography 176CL. Lecture, 3 hours.

Issues arising in the application of GIS technology in land and resource management, utilities and municipal government: GIS acquisition, management, staffing and application. (S)

176CL. Lab in Geographic Information Systems II
(1) CLARKE, GOODCHILD

Prerequisites: Geography 176A and 13; concurrent enrollment in Geography 176C. Laboratory, 3 hours.

Laboratory analysis of digital geographic information from physical and social sources, culminating in the development of a group project and its presentation. Use of a range of geographic information system software. Students gain experience in extracting data from distributed sources.

180. Geography of the Information Society
(4) COUCLELIS

Prerequisite: Geography 5; upper-division standing.

Recommended preparation: Geography 108. Lecture, 3 hours; discussion, 1 hour.

Examination of urban, regional, and global trends in human activity and interaction caused by the spread of electronic technologies. Topics include land-use change, telecommuting, the "virtual geographies" of the Internet, issues of democracy and power, planning in the information age.

181. Spatial Database Modelling for Geographic Phenomena
(4) T. SMITH

Prerequisite: Geography 176A. Lecture, 3 hours; discussion, 1 hour.

Course will examine the application of spatial database techniques for modelling geographic phenomena. Fundamental conceptual models (relational, object-oriented, and logical) and physical models will be discussed as well as special techniques for accessing spatial and temporal data.

184A. Introduction to Cartographic Programming
(4) CLARKE

Prerequisite: Computer Science 12. Lecture, 2 hours; laboratory, 4 hours.

Introduces the student to cartographic programming principles. Instruction will emphasize structured decomposition, device independence and reusability in cartographic software. Lab work will provide students with hands-on experience with implementing a reusable cartographic library.

184B. Advanced Cartographic Programming
(4) CLARKE

Prerequisite: Geography 184A. Lecture, 2 hours; laboratory, 4 hours.

Implementing cartographic systems that make use of graphical user interfaces, iconic and pictorial programming languages, and object-oriented cartographic techniques. Students will be expected to implement cartographic systems that integrate advance geographic algorithms with cartographic user interfaces.

185A. Geography Planning and Policy Making
(4) COUCLELIS

Prerequisite: Geography 108 or Environmental Studies 116. Lecture, 3 hours; discussion, 1 hour.

Relevance of geographic knowledge and skills to aspects of planning and policy making. Includes review of core concepts in decision making, planning theory, systems analysis, information systems, urban and regional modeling, forecasting, impact analysis, implementation of decisions, planning policies.

185B. Environmental Issues and Local Decision Making
(4) CHURCH

Prerequisite: Geography 3A or 3B or 5 or Environmental Studies 135A.

Not open for credit to students who have completed Geography 109. Lecture, 3 hours; laboratory, 1 hour.

Introduction to decision making techniques with regard to land use allocation and planning. Special emphasis on addressing conflicts involving environmental concerns and multiple objectives. Examples involving water resources development, corridor location (rights-of-way, e.g., transmission lines), preservation of endangered species, disposal of solid waste, and power plant siting are presented. (S)

185C. Urban and Regional Modeling and Planning
(4) SWEENEY

Prerequisite: Geography 108. Lecture, 3 hours; laboratory, 1 hour.

Introduction to the use of models of cities and regions in planning and policy analysis. Topics include population projection models, economic base, input-output modeling, and regional econometric models. Emphasis on understanding the theoretical basis, strengths, and weaknesses of each model; and matching appropriate models to policy applications. (F; offered in odd-numbered years)

185D. Urban and Environmental System Analysis
(4) CHURCH

Prerequisite: Geography 3A or 3B or 108.

Not open for credit to students who have completed Geography 192.

Recommended preparation: Mathematics 3A or 34A. Lecture, 3 hours.

Applications of operations research techniques and decision analysis in structuring approaches to urban environmental problems. Examples are drawn from problems in facility location, regional models, transportation and other networks, utility corridors and similar problems.

187. The Idea of Nature
(4) PROCTOR

Prerequisite: Geography 5 or Environmental Studies 1 or 3.

Same course as Environmental Studies 187.

Examination of recent western perspectives on the biophysical realm as expressed through science and popular culture. Emphasis on major theoretical disputes and possibilities for reconceptualizing nature.

188. The Ethics of Human-Environment Relations
(4) PROCTOR

Prerequisite: Geography 5 or Environmental Studies 1 or 3.

Same course as Environmental Studies 188.

Survey of contemporary environmental ethics, focusing on both philosophical and applied issues. Topics include anthropocentrism and its alternatives, the role of science and aesthetics, multicultural perspectives and the problem of relativism, and the conflict between radical and reformist environmentalism.

190. Location Theory and Modeling
(4) CHURCH

Prerequisite: Geography 5 or 108.

Recommended preparation: Mathematics 3A or 34A. Lecture, 3 hours.

A survey of the basic types of location problems encountered in the modern world and techniques used by analysts in government and industry to solve such problems. Relationships to Classic Location Theory and Models will be stressed. Students will have the opportunity to experiment with actual location models on a computer.

191. Introduction to Optimization Models for Geographic Problems
(4) CHURCH

Prerequisites: Mathematics 3A or 34A; upper-division standing.

An introduction to "Operations Research" methods that are used in the analysis of geographic problems, including linear programming, network, integer programming, and dynamic programming. Example problems involving spatial and temporal decision making are emphasized. (W; offered in even-numbered years)

191L. Laboratory in Optimization Methods for Geographic Problems
(1) CHURCH

Prerequisite: Geography 191 (may be taken concurrently). Laboratory, 1 hour.

Computer laboratory utilizing special optimization programs and computer graphics devices. (W; offered in even-numbered years)

193. Internship in Geography
(1-4) STAFF

Prerequisites: upper-division standing in geography; consent of department.

Students must have an overall grade-point average of 3.0. May be repeated for credit to a maximum of 12 units but only 4 units may count toward the major. Field, 3-12 hours.

Practical experience and research on geographical problems under faculty direction as interns with local, state, and federal agencies, with private research and development firms, and with other business organizations. Periodic and final reports required. (F,W,S)

195. Selected Problems in Geography
(2-4) STAFF

Prerequisite: upper-division standing in geography.

May be repeated once for credit. Lecture, 2-4 hours.

Investigation of selected geographic factors of major significance to human environmental interactions. Scope and emphasis variable each time offered.

198. Readings in Geography
(1-2) STAFF

Prerequisites: upper-division standing; completion of at least two upper-division courses in geography; consent of instructor.

Students must have a minimum 3.0 grade-point average. May be repeated to a maximum of 10 units; no more than 5 may be applied to the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Designed to provide in-depth directed inquiry into a topic of interest to the student. (F,W,S)

199. Independent Studies
(1-5) STAFF

Prerequisites: upper-division standing; completion of at least two upper-division courses in geography; consent of instructor.

Students must have a minimum 3.0 grade-point average. May be repeated to a maximum of 10 units; no more than 5 may be applied to the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. GEOG 199 is considered an honors course and is required for those seeking distinction in the major.

Selected research under the direction of a faculty member. (F,W,S)

199RA. Independent Research Assistance in Geography
(1-5) STAFF

Prerequisites: upper-division standing; completion of at least two upper-division courses in geography; consent of instructor.

Students must have a minimum 3.0 grade-point average. May be repeated to a maximum of 10 units; no more than 5 may be applied to the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Selected research under the direction of a faculty member.

GRADUATE COURSES

Please note: the letters in parentheses at the end of graduate course descriptions correspond to the following key: (S)-Systematics; (T)-Techniques.

200A. Introduction to Geographic Research
(2) STAFF

Required of all geography graduate students. Normally taken in fall quarter of entering academic year. Lecture, 2 hours.

Presentation and discussion by department faculty of research areas in the department. Systematic and technique areas of emphasis will be presented, as well as department facilities and research collaborations with other institutions. (ST)

200B. Introduction to Geographic Research
(4) STAFF

Prerequisites: Geography 200A or approval of Graduate Committee.

Required of all geography graduate students. Normally taken in winter quarter of entering academic year. Seminar, 3 hours.

Fundamental issues of research in geography and related areas: the geographic perspective, scientific reading/writing and problem formulation, research techniques, the scientific enterprise, and science and society. (ST)

200C. Introduction to Geographic Research
(2) STAFF

Prerequisites: Geography 200A or approval of Graduate Committee; and Geography 200B.

Required of all geography graduate students. Normally taken in spring quarter of entering academic year. Seminar, 2 hours; tutorial, 1 hour.

Directed readings and research leading to a draft thesis proposal (MA students) or a systematic literature review in perspective dissertation area (Ph.D. students); participation in seminars discussing ongoing graduate research. (ST)

201. Seminar in Geography
(2) STAFF

Required of all geography graduate students every quarter offered. Seminar, 3 hours.

A series of lectures and seminars on diverse research topics in human and physical geography, by visiting speakers or department faculty.

202A. Remote Sensing and Environmental Optics
(5) GAUTIER, DOZIER

Prerequisites: Geography 115A. Lecture, 3 hours; laboratory 3 hours.

Principles of radiation emission; radiative transfer equation and some solution methods; surface interactions; instrumentation; applications to remote sensing and energy budgets in atmosphere, ocean, and other media.

202B. Seminar in Environmental Optics
(4) GAUTIER, DOZIER

Prerequisite: Geography 202A. Seminar, 3 hours.

Seminar on electromagnetic radiation in the environment and applications to physical geography and remote sensing. Computational methods.

203. Seminar in Physical Geography
(4) DOZIER

Prerequisites: an upper-division course in physical geography and consent of instructor. Seminar, 3 hours.

Survey of current literature and concepts in physical geography. (S)

205. Seminar in Environmental Geography
(2-4) PROCTOR

Lecture, 3 hours.

Intensive reading and discussion on current topics in environmental geography. Sample areas of focus include environmental philosophy, human ideas of nature, and human-induced environmental change.

207. Biogeochemistry of the Soil Environment
(4) CHADWICK

Prerequisites: Chemistry 1A-B; and, Geography 3B or Geology 2; concurrent enrollment in Geography 207L; graduate standing.

Introduction to the chemical, hydrological, and biological characteristics of soils, their global distribution and their response to management.

207L. Soil Science Lab
(1) CHADWICK

Prerequisites: Chemistry 1A-B; and, Geography 3B or Geology 2; concurrent enrollment in Geography 207; graduate standing.

Field and laboratory projects designed to provide an understanding of soil-landscape distribution, soil morphology, and the physical and chemical properties that influence management decisions.

208. Water Resource Systems Planning and Management
(4) CHURCH, LOAICIGA

Lecture, 3 hours.

Introduction to techniques used in planning and management of water quantity and quality problems. Topics include river basin management of water quality, reservoir system operation for multipurpose use, and dealing with drought conditions. (S)

209. Pedology
(4) CHADWICK

Prerequisite: concurrent enrollment in Geography 209L. Lecture, 3 hours.

A process-based quantitative study of soil development as driving variables of climate, biota, lithology, topography and geologic time. Emphasis on interactions among soil and other earth system components: atmosphere, lithosphere, biosphere, hydrosphere. (S)

209L. Pedology Lab
(1) CHADWICK

Prerequisite: concurrent enrollment in Geography 209. Laboratory, 3 hours.

Independent projects that include field site selection, soil description, sampling, laboratory preparation of soil samples, and chemical and physical analysis designed to resolve specific hypotheses.

210. Analytical Methods for Environmental Problem Solving
(4) SIEGEL, MICHAELSEN

Prerequisite: graduate standing.

Same course as ESM 250.

Introduction of analytical methods used to solve environmental problems. Topics include: calculus, linear algebra, vector analysis, and differential equations. Emphasis is placed on proper documentation of problem statements and solutions. (S)

213. Digital Techniques in Remote Sensing
(4) MERTES

Prerequisites: Geography 115B-BL and 172-172L; concurrent enrollment in Geography 213L. Seminar, 3 hours.

Intermediate instruction in the interpretation of environmental phenomena recorded in digital data formats by remote sensing instruments. Emphasis is on learning the more advanced techniques of image restoration, image enhancement, image transformation, and both supervised and unsupervised classification. (T)

213L. Laboratory in Digital Techniques in Remote Sensing
(1) MERTES

Prerequisites: Geography 115B-BL and 172-172L; concurrent enrollment in Geography 213. Laboratory, 4 hours.

Interactive computer manipulation of digital data in laboratory exercises designed to develop skills in advanced techniques of image processing. Both commercial and public-domain software packages employed. Term project applying digital image processing skills to scientific problem. (T)

214A. Advanced Remote Sensing: Optical
(S) ROBERTS

Prerequisite: Geography 213. Lecture, 3 hours, laboratory, 2 hours.

Optical remote sensing (Vis/NIR, Thermal). Discussion of advanced sensors, techniques, modeling and applications in each spectral region. Includes a set of computer-based laboratory exercises. A final paper and oral presentation of a research project using remote sensing is required.

214B. Advanced Remote Sensing: Microwave
(S) ROBERTS

Prerequisite: Geography 213. Lecture, 3 hours, laboratory, 2 hours.

Microwave remote sensing (Active and Passive). Discussion of advanced sensors, techniques, modeling and applications in the microwave. Includes a set of computer-based laboratory exercises. A final paper and oral presentation of a research project using remote sensing is required.

215. Seminar in Remote Sensing
(2-4) ESTES

Prerequisite: Geography 115B.

May be repeated more than once with changes in content and methods examined. Seminar, 2-3 hours.

Advanced concepts in multispectral, multidate, manual, and automated remote sensing techniques. (ST)

216S. Remote Sensing Software
(4) DOZIER

Prerequisite: Geography 103. Lecture, 3 hours.

Analysis and development of software systems for remote sensing data. (T)

217. Western United States Field Seminar
(4) ESTES, DAVIS, MICHAELSEN

Prerequisite: graduate standing.

Study of the physical and cultural geography of the Western United States. Field study may include visits to federal, state, academic, and industrial facilities; National and State Parks, and monuments. Students prepare and present background material as part of course.

219. Field Seminar in Geography
(1-4) STAFF

Prerequisites: graduate standing.

May be repeated for credit to a maximum of 8 units. Field, 3 hours.

Field trips of one day or more, organized as opportune. Appropriate report required for each trip. Units commensurate with time and effort spent participating in field excursions and subsequent report preparation. (T)

220. Seminar in Regional Analysis
(4) COUCLELIS

Prerequisites: Geography 172-172L. Seminar, 4 hours.

Study of current research in regional analysis. The topic will differ each year and will be announced in advance. (S)

221. Research Methods in Human Geography
(4) MONTELLO

Prerequisites: Geography 200A-B-C (may be taken concurrently). Lecture, 3 hours; laboratory, 1 hour.

Logic and techniques of conducting empirical research in human geography. Covers hypothesis formulation, literature sources, data collection (including surveys), experimental and non-experimental design, data analysis, and ethical treatment of human subjects. (S; alternate years)

222. Spatial Decision Making
(4) T. SMITH

Prerequisite: Geography 105. Seminar, 3 hours.

Study of current theories and empirical evidence concerning decision making in a spatial context by individuals, firms, and government agencies. (S)

224. Methods of Regional Analysis
(3) STAFF

Prerequisites: Geography 108 and 185B; concurrent enrollment in Geography 224L.

Advanced seminar in methods of regional economic and population analysis. The population module covers the theory and construction of the multi-regional life table and projection model. The economic module reviews input-output models, regional econometric models, and CGE models. Other topics include data availability, incomplete data analysis, and demo-economic models. (S)

224L. Laboratory in Methods of Regional Analysis
(1) STAFF

Prerequisites: Geography 108 and 185B; concurrent enrollment in Geography 224.

Methods from Geography 224 are used to analyze the population and economy of California. Use of IMPLAN for regional input-output analysis and various programs in SAS to carry out the multi-regional life table and projection model calculations. (S)

225. Urban Problems
(4) GOLLEDGE, COUCLELIS

Recommended preparation: Geography 105 and 108.

Detailed studies of selected social, economic, and physical problems related to modern cities. (S)

227. Scientific Reasoning in Geography
(4) COUCLELIS, GOLLEDGE

Prerequisites: graduate standing.

Discussion of the application of reasoning principles from various philosophies of science and social science to relevant problems in geography. (T)

229. Environmental Perception and Cognition
(4) GOLLEDGE, COUCLELIS, MONTELLO

Prerequisites: graduate standing.

Theories and methods related to acquiring, representing, and analyzing knowledge of complex large-scale environments. (ST)

230. Behavioral Geography
(4) GOLLEDGE, COUCLELIS

Recommended preparation: Geography 105 and 108.

Survey of behavioral approaches in a variety of areas of geography. (S)

231. Cognitive Issues in Geographic Information Science
(4) COUCLELIS, MONTELLO

Prerequisite: graduate standing.

Theory and research on cognitive issues in geographic information science. Perception, memory, reasoning, communication, human factors in digital worlds. (S)

232. Cartographic Transformations
(4) STAFF

Prerequisite: Mathematics 3A or 34A.

Classical map projections; cartograms; empirical "rubber sheeting;" bi-dimensional regression. The geometry of geography; geodesics; geographical circles; the distortion tensor; nonsymmetric distances. (ST)

233. Tropical Meteorology
(4) GAUTIER

Lecture, 3 hours; discussion, 1 hour.

Description of tropical atmosphere. High to low frequency variability: monsoon, hurricanes, El Niño, satellite observations, and modeling. (S)

234. Seminar in Cartography
(4) STAFF

Prerequisite: Geography 118A or 127. Seminar, 4 hours.

Study and critique of advanced research work in cartography. Topic will vary from year to year. (T)

23S. Earth Radiation Budget and Clouds
(4) GAUTIER

Prerequisite: Geography 102 or 202. Lecture, 3 hours.

Earth radiation balance-greenhouse effect-cloud/radiation interaction. Radiative/convective climate models. ERB measurements from space. (S)

236. Remote Sensing of the Oceans
(4) WASHBURN

Prerequisite: Geography 104.

Survey of physical and biological oceanography from remote-sensing perspective. Discussion of sensor systems, platforms, and methodologies both in current use and planned. Topics include: space-time variability of ocean properties, primary productivity, ocean waves, and circulation.

237. El Niño: Atmosphere Ocean Interactions
(4) GAUTIER

Recommended preparation: course in tropical meteorology.

Low frequency oscillations of atmosphere and ocean in tropical regions. Atmosphere ocean interactions. El Niño observations and modeling. (S)

238. Advanced Remote Sensing of the Atmosphere
(4) GAUTIER

Recommended preparation: course in rediative transfer.

Advanced readings in research on theory and models of radiative transfer as bases for the remote sensing of the atmosphere and meteorological forecast.

239. Earth System Science
(4) GAUTIER

Description of various components of earth system: climate and hydraulic systems, biogeochemical dynamics and ecological dynamics. Observations and modeling of earth systems.

242A. Advanced Snow Hydrology
(4) DOZIER

Prerequisites: Geography 172-172L.

Nature of snow, snow metamorphism, snow surface energy exchange, snowmelt runoff, and avalanche hazards. Analysis through field measurements, remote sensing, and computer simulation. One two-day field trip. (S)

242B. Field Seminar in Snow Science
(4) DOZIER

Prerequisite: Geography 242A. Seminar, 2 hours; field, 2 hours; one field trip required.

Seminar and field analysis on snow metamorphism, snow chemistry, snowmelt runoff, energy exchange, remote sensing, and electromagnetic properties. (TS)

243. Migration Models
(4) SWEENEY

Recommended preparation: matrix algebra, introductory microeconomics. Seminar, 3 hours.

An advanced seminar on demographic and

economic models of human migration. Consideration of both macro-scale models including spatial interaction and Markov models of migration, and micro-scale models that consider the migration decision from an individual's or family perspective.

245. Advanced Groundwater Analysis
(4) LOAICIGA

Lecture, 3 hours; laboratory, 1 hour.

Steady and nonsteady groundwater flow motion in saturated and unsaturated porous media; tensorial analysis of hydraulic conductivity; hydrodynamic dispersion and groundwater pollution; sea water/groundwater interfacing; field and laboratory demonstrations of groundwater processes; and computer simulation of groundwater systems. (S)

246. Earth System Science: The Hydrologic Cycle
(5) LOAICIGA

Prerequisites: Mathematics 5C, and Geography 110, 112, and 172. Lecture, 3 hours; Laboratory, 2 hours.

The study of hydrologic processes on scales from local to global and the land-atmosphere-ocean interactions affecting the hydrologic cycle. Advanced concepts in hydrologic model development and testing will be presented. (W; offered in odd-numbered years)

247. Earth System Science: Biophysical and Biogeochemical Processes
(4) DAVIS, SIEGAL

Prerequisites: Mathematics 5C or Geography 167 or EEMB 145A. Lecture, 3 hours; discussion, 1 hour.

Distribution and dynamics of global ecosystems and the biogeochemical cycling of elemental materials. Focus on mapping, monitoring, and modeling of community composition and ecosystem processes. An emphasis is placed on how the global biosphere interacts with the atmosphere and hydrosphere.

248. Earth System Science: Energy and Radiation
(5) GAUTIER

Prerequisites: Mathematics 5C and Geography 102. Lecture, 3 hours; laboratory, 2 hours.

Processes affecting radiation and energy balance at the top of the atmosphere, within the atmosphere, and at the Earth's surface. This will include the greenhouse effect and the role of clouds, aerosols, and surface processes on climate. Radiative and radiative-convective modeling aspects will be presented and further developed in laboratory with the use of simplified models.

249. Earth System Science: Ocean-Atmosphere Dynamics
(4) MICHAELSEN

Prerequisites: Mathematics 5C, and Geography 104 and 110. Lecture, 3 hours; discussion, 1 hour.

The basic equations of motion for rotating fluids will be presented and modified to explain large-scale ocean and atmosphere motions. Topics will include: the geostrophic approximation; conservation of potential vorticity; Ekman transport and Ekman pumping; the quasi-geostrophic approximation; baroclinic instability; Rossby waves and Kelvin waves.

250. Environmental Soil Chemistry
(4) CHADWICK

Prerequisite: Chemistry 1A-B-C; and Geography 114A. Lecture, 3 hours.

The basics of chemical bonding theory, providing a basis for understanding acid base equitable and buffering in soils as well as basic redox processes. Reactions that affect the availability of nutrient and pollutant elements in soils.

251. Computational Methods for Watershed Analysis
(5) MERTES

Prerequisites: Geography 176A-B-C; or, Geography 115A-B-C; or, Geography 144 or Environmental Studies 144, and Geography 112.

Geographic Information Systems are the framework for implementing the stratification techniques of watershed analysis. Interactive computer manipulation of digital data in laboratory exercises will allow quantification and interpretation of the land use, hydrology, and geomorphology of the watersheds selected for study.

252. Clouds: Formation and Effects
(4) GAUTIER

Prerequisites: Geography 102.

What are clouds? How do they form and what is their effects on atmospheric radiation budget, dynamics, and on air-sea interactions?

253. Global Warming: Causes and Consequences
(4) GAUTIER

Prerequisite: Geography 134.

Radiative processes involved in global warming; carbon dioxide increase and uptake; role of clouds, oceans and biosphere; consequences: sea level changes, hydrological cycle intensification, etc.

256. Molecular Photosynthesis and Light in Aquatic Systems
(3) STAFF

Prerequisite: Geography 263.

A lecture course in introduce graduate students to the molecular processes of photosynthesis and the bio-optics of underwater light fields. (S)

261. Ocean Optics
(4) DICKEY, SIEGEL

Lecture, 3 hours.

An examination of the optical properties and radiative transfers in natural waters. Applications discussed include modeling of solar radiation penetration, relectance and transmittance at the air-sea interface, and ocean color remote sensing.

262. Upper Ocean Physical Processes
(4) SEIGAL, WASHBURN

Prerequisite: Geography 263.

May be repeated for credit with changes in content and methods.

Detailed studies of upper ocean dynamics and physical processes. Topics may include mesoscale dynamics, mixed layer modeling, radiative transfer, turbulent mixing processes, and internal waves. (W)

263. Introduction to Physical Oceanography
(4) DICKEY, SIEGEL, WASHBURN

Lecture, 3 hours.

A graduate-level introduction to physical oceanography. Topics discussed include: properties of sea water, derivation and application of the equations of motion for a rotating planet, and the dynamics of wind- and buoyancy-driven general circulation. (S)

264. Seminar in Oceanography
(4) SIEGEL, WASHBURN

Prerequisites: Geography 163 or 263; and Geography 265.

Graduate seminar in physical, optical, and biological oceanography. (S)

265. Ocean Waves, Tides and Mixing Dynamics
(4) DICKEY, SIEGEL, WASHBURN

Lecture, 3 hours.

Examination of waves, tides, and turbulent processes in the ocean. Topics include surface waves, tidal flows, internal waves, small scale mixing processes, near-surface mixed layers, and bottom boundary layers. Instrumentation and sampling techniques will also be discussed. (S)

266. Introduction to Atmospheric Sciences
(4) MICHAELSEN

Prerequisite: graduate standing.

Same course as ESM 229. Lecture, 3 hours; seminar, 1 hour.

Fundamentals in atmospheric processes that are important for understanding the role of the atmosphere in earth's climate and biogeochemistry. Graduate-level introduction to radiation, dynamics, clouds, chemistry, and how they interact.

267. Biogeography: The Study of Plant and Animal Distributions
(4) DAVIS

Prerequisite: Geography 167 or EEMB 103A-B or 140 or Botany 146 or EEMB 113A. Seminar, 3 hours.

Theory and methods of biogeographical research. Emphasis on plants and plant geography. Seminar includes presentation of classic papers as well as current research work. Research paper required. (S)

268. Seminar in Climatology
(4) MICHAELSEN, GAUTIER

Prerequisite: graduate standing.

Selected topics in current research on theoretical and empirical modeling of climate change and climate variability. (S)

269. Dynamic Meteorology
(4) MICHAELSEN

Prerequisites: Mathematics 3C; and Geography 110. Lecture, 3 hours; discussion, 1 hour.

Application of basic equations of fluid motion to flows on a rotating sphere. Emphasis on scaling techniques appropriate for describing and predicting large-scale atmospheric motion. Additional topics include numerical models, atmospheric waves, instability, and the mechanics of the general circulation. (S)

270. Seminar in Spatial Ecology
(3) DAVIS, DOZIER, GOODCHILD, SIEGEL

Prerequisite: consent of instructor.

Selected advanced topics in spatial analytic theory and methods for the characterization and analysis of ecological systems. Course may be repeated for credit.

271. Numerical Aspects of Geographic Modeling
(4) SIEGEL

Prerequisite: Geography 210. Lecture, 3 hours.

Design and implementations of grid-based numerical models for addressing the dynamics of geographic systems. Finite difference and finite element methods will be discussed. Emphasis will be placed on the development of geographically consistent models. (S)

272. Advanced Topics in Biogeography
(4) DAVIS

Prerequisite: Geography 167 or ESM 201.

Special topics of current importance in biogeography and conservation. Course content will vary. Information on upcoming course content can be obtained from the instructor or in the department office.

273. Natural Vegetation Classification, Inventory, and Dynamics
(4) DAVIS

Prerequisites: Geography 167, 172 and 172L.

Problems in analysis of natural vegetation, including sampling and measurement, classification, ordination, gradient analysis and dynamic modeling. (TS)

274. Introduction to Geographical Data Analysis
(3) MICHAELSEN

Prerequisites: Geography 172, 172L, and 210; concurrent enrollment in Geography 274L.

Introduction to the analysis of spatial data. Measures of spatial association, multivariate regression applied to spatial data. Geostatistical techniques for modeling and interpolating spatial data.

274L. Laboratory in Introductory Geographical Data Analysis
(2) MICHAELSEN

Prerequisites: Geography 172-172L; concurrent enrollment in Geography 274.

Computational techniques for analyzing multivariate spatial data. Methods modifying existing statistical and mathematical software packages to develop spatial analysis routines.

275. Seminar in Geographical Information Systems
(4) GOODCHILD, T. SMITH

Study of current trends in geographically oriented information processing systems. (ST)

276A Advanced Spatial Data Analysis
(3) STAFF

Prerequisites: Geography 274-274L; concurrent enrollment in Geography 276AL. Lecture, 3 hours.

Analysis of spatial data. Spatial autocorrelation, autoregressive and moving average models, regression models applied to spatial problems, point processes.

276AL. Advanced Laboratory in Spatial Data Analysis
(2) STAFF

Prerequisites: Geography 274-274L; concurrent enrollment in Geography 276A.

Design and implementation of computational techniques for analyzing spatial data.

276B. Geographical Time Series Analysis
(3) WASHBURN

Prerequisites: Geography 172; concurrent enrollment in Geography 276BL.

Introduction to time series analysis in geography. Topics will include spatial and temporal sampling, fast fourier transform techniques, linear systems, and digital filtering.

276C. Special Topics in Geographical Data Analysis
(3) STAFF

Prerequisite: consent of instructor; concurrent enrollment in Geography 276CL.

Advanced topics in the analysis of spatial and temporal data. May be repeated for credit.

276CL. Special Topics Laboratory
(2) STAFF

Prerequisites: consent of instructor; concurrent enrollment in Geography 276C.

Laboratory in advanced graphic data analysis. May be repeated for credit.

277. Spatial Environmental Modeling
(4) ROBERTS, DAVIS

Prerequisite: Consent of instructor.

May be repeated for credit provided topics are different.

Seminar covering topics in spatial environmental modeling. Integrates techniques such as remote sensing and GIS into modeling of spatial processes. Topics include biogeochemical cycles, hydrology, species distribution and habitat disturbance.

284A. Introduction to Cartographic Programming
(4) STAFF

Prerequisite: Computer Science 12.

An introduction to cartographic data structures, algorithms, and programming principles. Instruction will emphasize structured decomposition device independence and reusability in cartographic software. Lab work will provide students with hands-on experience with implementing a reusable cartographic library. (T)

284B. Advanced Cartographic Programming
(4) STAFF

Prerequisite: Geography 284A.

Design and implementation of cartographic systems using graphical user interfaces, iconic and pictorial programming languages, and object-oriented cartographic techniques. Students will be expected to create cartographic applications software by integrating advanced geographic algorithms with cartographic user interfaces. (T)

28S. Information Systems for the Study of Global Change
(4) DOZIER

Prerequisites: Geography 172-172L and Geography 176A-AL. Lecture, 2 hours; seminar, 2 hours.

Design, implementation, and status of distributed information systems used in global change research.

286. Human-Induced Environmental Change
(2-4) PROCTOR

Lecture, 3 hours; discussion, 2 hours.

Examination of anthropological environmental change at the global, regional, and local levels. Emphasis on identifying major proximate and root causes, and assessing recent human impacts relative to long-term environmental change.

287. The Idea of Nature
(2-4) PROCTOR

Examination of recent western perspectives on the biophysical realm as expressed through science and popular culture. Emphasis on major theoretical disputes and possibilities for reconceptualizing nature.

288. Special Topics in Geography
(4) GOLLEDGE

Prerequisite: graduate standing.

Special topics in geography will be defined and offered as demand requires, or as faculty develop new interests or wish to examine topics not otherwise covered in existing course offerings.

289. The Ethics of Human-Environment Relations
(2-4) PROCTOR

Prerequisite: graduate standing. Lecture, 3 hours; discussion, 2 hours.

Survey of contemporary environmental ethics, focusing on both philosophical and applied issues. Topics include: anthropocentrism and its alternatives, the role of science and aesthetics, multicultural perspectives and the problem of relativism, and the conflict between radical and reformist environmentalism. (W; offered in even-numbered years)

290. Urban and Environmental Systems Analysis
(4) CHURCH

Prerequisite: Geography 185B or Economics 1.

Applications of operations research techniques and decision analysis in structuring approaches to urban and environmental problems. Examples are drawn from problems in facility location, regional models, transportation and other networks, utility corridors, and similar problems. (ST)

291. Optimization Models for Geographic Problems
(4) CHURCH

Prerequisite: Mathematics 3A or 5A or 34A.

Survey of advanced optimization techniques with applications to geographical problems. Methods include advanced topics in linear programming, dynamic programming, integer programming, networks, and queuing. (T)

292. Mathematical Models in Physical Geography
(4) STAFF

Prerequisites: Geography 172-172L; one upper-division physical geography course. Seminar, 3 hours.

Mathematical models of water and energy flows through the atmosphere, in stream channels, on and in soils and vegetation. (ST)

293. Mathematical Models in Human Geography
(4) COUCLELIS

Seminar, 3 hours.

Overview of current modeling issues in behavioral geography and urban and regional analysis and planning, an emphasis on work by members of the department faculty and occasionally visitors. (ST)

294. Advanced Topics in Location and Transportation Systems
(4) CHURCH

Prerequisite: Geography 190 or 191 or 291.

May be repeated for credit with changes in content, methods, and applications areas examined.

Study of current research and application of systems models in the analysis, design, operation, and scheduling of transport and location problems. (S)

295. Advanced Topics in Pedology
(4) CHADWICK

Prerequisite: Geography 209.

Intensive reading and discussions of current topics in soil-geomorphology, soil-geochemistry, and quantitative modeling of soil processes.

29SA. Soils and Ecosystems
(3) CHADWICK, SCHIMEL

Prerequisite: graduate standing.

Same course as EEMB 295A.

Development of the links between the biological and inorganic components of the soil. Water availability and nutrients control plant and soil microbial communities. These in turn affect the soil by enhancing weathering and modifying the local chemical environment.

S00. Teaching Assistant Training
(4) GOLLEDGE

May be repeated for credit. Seminar, 2 hours; laboratory, 1 hour; preparation, 1 hour.

Compulsory course for new teaching assistants to examine geographic teaching methods. Emphasis on use of special equipment and facilities in the department, teaching aids, examination preparation and grading, student advising, and special problems.

S9S. Seminar in Marine Science
(2) DICKEY, ALDREDGE

A series of lectures and seminars on diverse research topics in marine science.

596. Directed Reading and Research
(2-8) STAFF

Prerequisites: consent of instructor and department chair.

No more than half the graduate units necessary for the master's degree may be taken in Geography 596. Seminar, 2-8 hours.

A written proposal for each tutorial must be approved by the department.

S97. Individual Study for Ph.D. Examinations
(1-12) STAFF

Prerequisites: consent of instructor and graduate advisor.

No unit credit allowed toward advanced degree. S/U grade. Maximum of 12 units per quarter; enrollment limited to 24 units total. Variable hours.

Instructor should be student's major professor or chair of the doctoral committee.

598. Master's Thesis Research and Preparation
(1-12) STAF

Prerequisites: consent of instructor and graduate advisor.

No unit credit allowed toward master's degree. S/U grading. Preparation, 1-6 hours.

Research toward and writing of thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF

Prerequisites: consent of instructor and graduate advisor. No unit credit allowed toward Ph.D. degree. S/U grading. Preparation, 1-6 hours.

Research toward and writing of dissertation. Instructor should be chair of student's doctoral committee.

Geological Sciences

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Faculty

Ralph J. Archuleta, Ph.D., Institute for Geophysics and Planetary Physics, Scripps Institution of Oceanography, Professor (seismic source studies, strong motion seismology)

Tanya M. Atwater, Ph.D., Scripps Institution of Oceanography, Professor (plate tectonics, ocean floor spreading)

Stanley M. Awramik, Ph.D., Harvard University, Professor (biogeology, paleobiology)

James R. Boles, Ph.D., University of Otago, Professor (sedimentary petrology)

Cathy J. Busby, Ph.D., Princeton University, Professor (sedimentology)

Jordan F. Clark, Ph.D., Columbia University, Assistant Professor (hydrogeology)

Michael DeNiro, Ph.D., California Institute of Technology, Professor (stable isotopes and geobiology)

Phillip B. Gans, Ph.D., Stanford University, Associate Professor (structural geology, tectonics, geochronology)

Bradley R. Hacker, Ph.D., UC Los Angeles, Associate Professor (metamorphic petrology, structural geology, geochronology)

Rachel M. Haymon, Ph.D., Scripps Institution of Oceanography, Professor (marine geology and geochemistry)

Edward A. Keller, Ph.D., Purdue University, Professor (geomorphology, hydrology, environmental geology)

James P. Kennett, Ph.D., Victoria University of Wellington, New Zealand, Professor (paleo-oceanography, marine geology)

David W. Lea, Ph.D., Massachusetts Institute of Technology—Woods Hole Oceanographic Institute, Professor (chemical oceanography and paleo-oceanography)

Bruce P. Luyendyk, Ph.D., Scripps Institution of Oceanography, Professor (tectonics, geophysics, paleomagnetism)

Ken C. Macdonald, Ph.D., Massachusetts Institute of Technology, Professor (marine tectonics and magnetism)

James M. Mattinson, Ph.D., UC Santa Barbara, Professor (petrology, isotope geology)

William A. Prothero, Ph.D., UC San Diego, Professor (seismology, seismic instrumentation, educational technology)

Frank J. Spera, Ph.D., UC Berkeley, Professor (igneous petrology, magma transport phenomena)

Arthur G. Sylvester, Ph.D., UC Los Angeles, Professor (structural geology, petrofabrics, neotectonics)

Toshiro Tanimoto, Ph.D., UC Berkeley, Professor (seismology, earth structure)

Bruce H. Tiffney, Ph.D., Harvard University, Professor (evolutionary biology, paleobotany)

Andre R. Wyss, Ph.D., Columbia University, Professor (vertebrate paleontology)

Emeriti Faculty

John C. Crowell, Ph.D., UC Los Angeles, Professor Emeritus (tectonics, paleoclimates)

Richard V. Fisher, Ph.D., University of Washington, Professor Emeritus (volcanology)

Michael D. Fuller, Ph.D., Cambridge University, Professor Emeritus (geomagnetism)

Clifford A. Hopson, Ph.D., Johns Hopkins University, Professor Emeritus (igneous and metamorphic petrology)

Robert M. Norris, Ph.D., Scripps Institution of Oceanography, Professor Emeritus (geomorphology, quaternary geology)

George R. Tilton, Ph.D., University of Chicago, Professor Emeritus (geochronology)

Donald W. Weaver, Ph.D., UC Berkeley, Professor Emeritus (stratigraphy, paleontology)

William S. Wise, Ph.D., Johns Hopkins University, Professor Emeritus (mineralogy, geochemistry)

Affiliated Faculty

Oliver Chadwick, Ph.D. (Geography and Environmental Studies)

Thomas Dunne, Ph.D. (School of Environmental Science and Management)

John A. Endler, Ph.D. (Ecology, Evolution, and Marine Biology)

Craig Nicholson, Ph.D., (Institute for Crustal Studies)

Richard H. Sibson, Ph.D., (Geological Sciences)

Samuel S. Sweet, Ph.D. (Ecology, Evolution, and Marine Biology)

Robert K. Trench, Ph.D. (Ecology, Evolution, and Marine Biology)

James P. Vanyo, Ph.D. (Mechanical and Environmental Engineering)

Douglas Wilson, Ph.D. (Marine Science Institute)

Geology is the science of the earth—the study of its rocks, minerals, and records of ancient life, and of the physical, chemical, and biological processes, past and present, at work in the earth's interior, on its surface, and within its envelope of water and air. The methods of geology are applicable to the study of the moon and the planets.

The undergraduate program in geology provides the background in elementary geology, basic sciences, and mathematics necessary for graduate work in geology or closely related fields such as geophysics, geochemistry, paleobiology, or oceanography. In addition, the program retains the flexibility to permit preparation for eventual specialization in related fields. In consultation with an undergraduate advisor, students may develop individual programs tailored to their interests and career goals.

There are numerous career opportunities in the geological sciences in educational, governmental, and industrial organizations. Students with a bachelor's degree in geological sciences who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Prospective students are required to confer with a department advisor before beginning a program in geology. Students may correspond with advisors before they enter the university, and they are expected to attend a meeting with the department chair scheduled during registration week. The bachelor of science degrees in geophysics and geological sciences (with two optional emphases in paleobiology and earth systems, and an optional concentration in engineering geology and hydrogeology) are the primary degrees offered by the department. The department also offers the bachelor of arts in geological sciences (with an optional emphasis in science education) and the minor in geological sciences.

Senior Honors Program

Students with outstanding academic records in geological sciences are encouraged to apply for the senior honors program. The honors program centers on an independent research project which must represent a significant advanced undertaking in an area of academic or applied research. It must be approved by the department chair and by a faculty member who serves as the project supervisor. Program requirements include a 3.2 grade-point average in the major and overall, maintenance of the 3.2 grade-point average through the duration of the project, completion of a Geology 196H senior honors thesis under the direction of the faculty supervisor, and the preparation and oral defense of a written thesis. Distinction in the Major will be awarded at graduation to those students whose projects are evaluated as acceptable. Applications are available in the department office and are due by November 1. Students whose projects require funding should apply to the President's Undergraduate Research Fund before November 1, or the National Science Foundation in early October.

Undergraduate Program

Bachelor of Science—Geological Sciences

Preparation for the major. Students must complete the following: Mathematics 3A-B-C; and either Mathematics 5A or one course from PSTAT 5AA-ZZ; Chemistry 1A-AL-B-BL-C-CL (or 2 series); Geology 2, 3, 14, and 14X; Physics 1-2-3-4-5 (or 6A-B-C plus Geology 100 and 134 allowed by departmental approval only). Highly recommended: Mathematics 5B and 5C, statistics, computer programming, and Geology 18 (fall and spring field trips). A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term

papers in other geoscience courses, or by completing a technical writing course with a C or better. Writing 109ST is highly recommended.

Upper-division major. A minimum of 54 upper-division units in geology is required, selected in consultation with the undergraduate advisor. These units must include 8 units from Geology 102A-AL, 102B-BL, 102C-CL; 103, 104A, 104B, and 118. In addition, students must complete 22 upper-division units, including three courses from Geology 100 (if not used in preparation), 111, 117, 122, one course from 124AA-ZZ, 157, or Geography 176B. (Geology 101, 110, and 116SS cannot apply to the 22 units.) Up to 12 upper-division units from another department may be accepted by petition.

Concentration in Engineering Geology and Hydrogeology: Students desiring this concentration must include Geology 100 (if not used in preparation), 113, 117, 168, and 173-173L (or Geography 116-116L) in their 22 upper-division units of electives. Also recommended for the concentration: Geography 176B, Geology 124AA-ZZ, 169, and Environmental Studies 144. *Note: The concentration will not be specified on the transcript or diploma.*

Bachelor of Science—Geological Sciences—Earth Systems Emphasis

Earth systems science emphasizes an integrated view of the earth as a dynamically linked system. Students in this major take traditional geology courses while also pursuing course work in related disciplines, such as ocean, atmospheric, and earth-surface sciences. The program provides broad preparation for both postbaccalaureate employment (especially in environmental fields) and graduate studies in geosciences.

Preparation for the major. Students must take the following: Mathematics 3A-B-C; Mathematics 5A-B, or MCDB 1A-AL-B, EEMB 2, and either MCDB 1BL or EEMB 2L; Chemistry 1A-AL-B-BL-C-CL; Physics 6A-B-C and Geology 100, or Physics 1-2-3-4-5; Geology 2 and 14; one of Geology 3, 4, or 4S. Recommended courses: Geology 18 (fall and spring field trips), statistics, and a course in computer programming. A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term papers in other geoscience courses, or by completing a technical writing course with a grade of C or better. Writing 109ST is highly recommended.

Upper-division major. At least 53 upper-division units are required, including Geology 103, 104A, 104B, 122, 164A-B-C, 4 units from 124AA-ZZ and 12 units of senior research experience chosen from the following list: Geology 118, 133, 181, 182, 191. In consultation with an advisor, students must select 13-21 units of upper-division electives from the following: Geology 102A-B-C, 104B, 111, 117, 123, 134, 157, 161, 165, 168, 169, 170, 198, 199; Chemistry 113A; Geography 104, 110, 115A, 115B, 116.

Bachelor of Science—Geological Sciences—Paleobiology Emphasis

Paleobiology is the study of fossils as evidence for the patterns and processes of evolution over geological time. Fossils embody some, but not all, of the traits of the animals they represent. The paleobiologist seeks to understand the geological context in which a fossil is found and to interpret the biology of the fossil from a sound knowledge of living organisms. Students in paleobiology take most of the traditional geology courses in addition to their coursework in biology and related fields.

Preparation for the major. Students must take the following: Mathematics 3A-B or 34A-B; PSTAT 5A or Psychology 5 or EEMB 30 (or related course by petition); Chemistry 1A-AL-B-BL-C-CL; Physics 6A-AL-B-BL-C-CL; MCDB 1A-AL-B, EEMB 2-3-3L, and either MCDB 1BL or EEMB 2L; Geology 2, 3, and 14. Recommended courses: Geology 18; for students interested in paleobotany, EEMB 21. A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term papers in other geoscience courses, or by completing a technical writing course with a grade of C or better.

Upper-division major. At least 53 upper-division units are required, including Geology 103, 104A, 104B, 111, 111L, 118 or 119 (or other field course by petition); EEMB 120; EEMB 131 or Geology 121; two courses from Geology 116, 141, 148, 162. In consultation with an advisor, students select three additional courses normally chosen from the following (one of which must be from Geology): Anthropology 105, 151, 153T, 180A, 180B; EEMB 103A, 103B, 107, 108, 112, 115, 116, 140, 141, 147, 150, 161; Geography 167, 170; Geology 116 (if not used above), 122, 141, 143, 157, 161, 162, 163, 190. Additional upper-division geology units to bring the upper-division total in the major to 53 units. Students are encouraged to consider a senior research project in paleobiology (Geology 199).

Bachelor of Arts—Geological Sciences

Preparation for the major. Students must take Mathematics 3A-B-C; Chemistry 1A-AL-B-BL-C-CL (or 2 series); Physics 1-2-3-4-5 or Physics 6A-AL-B-BL-C-CL and Geology 100 or 134; Geology 2 and 3; Geology 14. Highly recommended: Geology 18 (fall and spring field trips); PSTAT 5A; and a course in computer programming. A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term papers in other geoscience courses, or by completing a technical writing course with a grade of C or better.

Upper-division major. A minimum of 43 upper-division units in geology is required, selected in consultation with the undergraduate advisor. These units must include Geology 103, 104A, 111, two courses from 102A-B-C, and 26 units of upper-division electives in geological sciences.

Bachelor of Arts—Geological Sciences—Science Education Emphasis

The geological sciences major naturally lends itself to preparation for careers in science education, because it requires a broad background in mathematics, physics, chemistry, and geology. The emphasis in science education is designed for students who plan to earn a California Teaching Credential after graduation. Students in this major should consult early with the Graduate School of Education to ensure completion of all requirements for admission to the desired credential program.

Preparation for the major. Students must take either Mathematics 3A-B-C or Mathematics 34A-B and PSTAT 5A; Chemistry 1A-AL-B-BL-C-CL (or 2 series); Physics 6A-AL-B-BL-C-CL; MCDB 1A-AL-B, EEMB 2-3-3L, and either MCDB 1BL or EEMB 2L; Geology 2, 3, either 4 or 4S, and 14. Recommended: Geology 18 (fall and spring field trips). A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term papers in other geoscience courses, or by completing a technical writing course with a grade of C or better.

Upper-division major. At least 42 upper-division units are required, including Geology 103, 104A, 123, 170, and two courses from 102A-B-C; Geography 110; 16 units from upper-division Geology, Geography or Environmental Studies, including at least three courses from the following list: Geology 100, 104B, 109, 111, 113, 117, 157, 164A-B-C, Geography 116, 176A-B. The following courses are highly recommended: Geology 160, 187; Geography 104, 112, 130, 162.

Bachelor of Science—Geophysics

Preparation for the major. Students must take the following: Mathematics 3A-B-C and Mathematics 5A-B-C; Chemistry 1A-AL-B-BL-C-CL (or 2 series); Geology 2, 3, and 14; Physics 1-2-3-3L-4-4L-5-5L; one course from Computer Science 5AA-ZZ or 10. A grade of C- or better is required in all courses in the preparation for the major.

Every student must be certified for technical writing competence. Certification may be achieved by submitting acceptable writing in Geology 104A, by writing acceptable term papers in other geoscience courses, or by completing a technical writing course with a C or better. Writing 109ST is highly recommended.

Upper-division major. At least 44 upper-division units in geology, physics, and mathematics are required, chosen in consultation with an advisor. These units must include

Geology 103, 104A, 136, and three courses from Geology 100, 133, 138, and 157. Two sequences from the following: Physics 100A-B, 105A-B, 110A-B; Mathematics 104A-B, 122A-B, 124A-B, 144A-B; ECE 130A-B; Geography 176A-B. Additional upper-division geology courses to bring the upper-division Geology total to 32 units and the overall total in the major to 44 units. *(Note: Geology 101, 110, 116SS will not apply.)*

Recommended electives: statistics, advanced mathematics, Geology 18, 14, 102A-B-C, 104B, 124AA-ZZ, 160, and 199RA.

Minor—Geological Sciences

Up to 5 units of Geology 160 (graded P/NP only) may apply to the minor. All other courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in geological sciences and those offered by other departments and applied to the minor.

Preparation for the minor. No specific courses are required. Note, however, that most upper-division courses in geology have prerequisites of lower-division geology and often mathematics, chemistry, or physics. Consult departmental advisors for assistance in planning.

Upper-division major. Eighteen units of upper-division geology courses. Geology 101 may not be applied to this requirement, and no more than 5 units of Geology 160 will be accepted.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

Admission

In addition to departmental requirements for admission, applicants must also meet the university requirement for admission described in the chapter "Graduate Education at UCSB." The deadline for applications is January 15. Applicants are informed of acceptance or denial by mid-March. Students normally are not accepted into the graduate program during winter and spring quarters unless approved in early March of the previous year.

In addition to students with undergraduate majors in geology, the department also encourages students with bachelor's degrees in sciences other than geology to apply for admission.

Master of Arts—Geological Sciences and Master of Science—Geophysics

Degree Requirements

M.A. and M.S. candidates follow an integrated course of study recommended by a placement committee and the graduate advisor.

The student must demonstrate, by coursework and by preparation of one research paper and by oral comprehensive examination, superior competence in the field of specialization, broad knowledge in the geological sciences, and satisfactory knowledge of sciences other than geology that are relevant to the fields of interest.

The M.A. and M.S. degrees are normally earned by preparation of a satisfactory thesis and completion of 30 units (at least 20 units in graduate courses). Geology 260 and all 500-series courses (except 596) are excluded from these graduate course units.

M.S. degree candidates must complete research in geophysics under faculty supervision. Master of science degree candidates may also be required to present a defense of the thesis in open forum.

Doctor of Philosophy—Geological Sciences

The Ph.D. in geological sciences encompasses study in any of the branches of geology and geophysics. To earn the Ph.D., a student must prepare a satisfactory doctoral dissertation and complete 30 units of geology (at least 12 units in graduate courses) while in residence at UCSB. Geology 260 and all 500-series courses (except 596) are excluded from these graduate course units. In addition, students must successfully complete the following:

1. Doctoral qualifying exam. The student must demonstrate, by coursework and by preparation of one research paper and by oral examination, superior competence in the field of specialization, broad knowledge in the geological sciences, and satisfactory knowledge of sciences other than geology that are relevant to the fields of interest.

2. Advancement to candidacy. After completion of (1) above, but before being formally admitted to candidacy, the student must pass a comprehensive oral qualifying examination administered by the dissertation committee.

3. Dissertation defense. A dissertation must be prepared in a professional style and approved by the committee. The candidate is required to present its principal conclusions in an open forum.

Geological Sciences Courses

LOWER DIVISION

1. Geology and Environment
(4) KELLER

Introduction to geology and environment including: human population and sustainability; physical geologic processes; use, pollution and management of water, mineral, and soil resources; process and mitigation of natural hazards; global climate change; waste management; environmental health; and environmental planning.

2. General Geology: Physical
(4) STAFF

Lecture, 3 hours; laboratory, 2 hours.

Introduction to the earth sciences; properties and processes of the earth's surface and its interior; rocks and minerals, geologic maps, land forms, and structures. (F,W,S)

2H. General Geology: Physical (Honors)
(1) STAFF

Prerequisites: concurrent enrollment in Geological Sciences 2; honors standing. Discussion, 1 hour.

A supplement to Geological Sciences 2 focusing on properties and processes of the earth's surface and its interior; rocks and minerals, geologic maps, land forms and structures. (F, W, S)

3. General Geology: Historical
(4) STAFF

Prerequisite: Geological Sciences 2. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Laboratory required for majors.

Antiquity and history of the earth, its physical changes, and the record of biological evolution. (S)

3H. General Geology: Historical (Honors)
(1) STAFF

Prerequisites: concurrent enrollment in Geological Sciences 3. Discussion, 1 hour.

A supplement to Geological Sciences 3 focusing on antiquity and history of the earth, its physical changes, and the record of biological evolution. (S)

3LX. Laboratory, General Geology-Historical
(1) STAFF

Prerequisite: consent of instructor. Laboratory, 3 hours.

Elementary problems in paleontology and stratigraphy. (S)

4. Introduction to Oceanography
(4) STAFF

Not open for credit to students who have taken Geological Sciences 4S. Lecture, 3 hours; laboratory, 2 hours.

An introduction to oceanography covering the major physical, chemical, and geological features of the oceans, their role in earth history, and potential use as a natural resource. (F,W,S)

4H. Introduction to Oceanography (Honors)
(1) STAFF

Prerequisites: concurrent enrollment in Geological Sciences 4. Discussion, 1 hour.

A supplement to Geological Sciences 4 focusing on major physical, chemical, and geological features of the oceans, their role in earth history, and potential use as a natural resource. (F,W,S)

4S. Introduction to Oceanography
(4) LEA, MACDONALD

Not open to students who have completed Geological Sciences 4.

Similar to Geological Sciences 4, but designed for students with an interest in science desiring a small, more intensive class format. Topics include a survey of ocean basins, plate tectonics, seawater, the atmosphere, ocean climate and circulation, oceanic productivity and biota.

4W. Introduction to Oceanography
(4) PROTHERO

Not open to students who have completed Geological Sciences 4 or 4S..

Introduction to oceanography covering the major physical, chemical, and geological features of the oceans, their role in earth history, and potential use as a natural resource.

7. The Age of Dinosaurs
(4) WYSS

Lecture, 3 hours; discussion, 1 hour.

The origin and diversification of dinosaurs, and the evolutionary relationship of dinosaurs (including their living descendents) to other major groups of vertebrates. Broad introduction including discussion of dinosaur ecology, anatomy, extinction, and paleogeography. (F)

7H. The Age of Dinosaurs (Honors)
(1) WYSS

Prerequisites: concurrent enrollment in Geological Sciences 7. Discussion, 1 hour.

A supplement to Geological Sciences 7 focusing on the origin and diversification of dinosaurs, and the evolutionary relationship of dinosaurs (including their living descendents) to other major groups of vertebrates. Broad introduction including discussion of dinosaur ecology, anatomy, extinction, and paleogeography. (F)

9. Gem Minerals
(4) WISE

Lecture, 3 hours; laboratory, 2 hours.

A general course in mineralogy, emphasizing those minerals used for gemstones. Topics include physical properties important for gem minerals (color, hardness, and refractive index), symmetry of crystals, and various modes of origin of gem minerals.

10. Antarctica
(4) LUYENDYK

Recommended preparation: Geological Sciences 2 and 4. Lecture, 3 hours; discussion, 1 hour.

The interrelations of the physical and biological environments on the continent of Antarctica; Antarctica as an Earth system. Included are studies of the tectonic history, global warming, ozone depletion, mineral resources, and the history of scientific exploration of the continent. (F)

14. Earth Materials I
(4) HAYMON, MATTINSON

Prerequisites: Geological Sciences 2 and Chemistry 1A (may be taken concurrently). Lecture, 3 hours; laboratory, 3 hours.

Mineral and rock identification in hand specimens, origins of specific mineral and rock types. (F)

14X. Optical Mineralogy
(2) HAYMON, MATTINSON

Prerequisite: Geological Sciences 14 (may be taken concurrently). Lecture, 1 hour; laboratory, 3 hours.

Optical properties of inorganic crystals; techniques of mineral identification using the polarizing microscope; strategies for studying rocks in thin section. (F)

18. Field Studies in Geological Science
(1) SYLVESTER, KELLER, TIFFNEY, ATWATER, GANS

May be repeated four times for credit. P/NP grading only. Field trip.

Four and one-half day field trip, fall or spring quarter. Field studies under guidance of two or three staff members introducing the geology of California. Four trips offered in sequence: fall: Imperial and Colorado Deserts or Eastern Mojave Basin; spring: Death Valley or Saline Valley-Inyo-White Mtns., Mono Lake. (F,S)

19. Geology of Yosemite Valley
(1) KELLER

Introduction to the geology, geomorphology, river processes, glacial history, and environmental geology of Yosemite valley. The four-day field trip includes one day in the lower Yosemite valley, one day in the upper valley, and one-half day of independent study. (S)

20. Geological Catastrophes
(4) ARCHULETA, BUSBY

Lecture, 3 hours; discussion 1 hour.

Course deals with geological catastrophes, e.g., earthquakes, volcanic eruptions, tsunamis, and landslides. Students will learn the basic physical causes of these naturally occurring events and discuss the consequences. (W)

30. The History of Life
(4) AWRAMIK, TIFFNEY

Lecture, 3 hours; discussion, 1 hour.

The origin and evolution of life from its beginning over 3-1/2 billion years ago to the present day. Broad introduction to the complexity and diversity of life as revealed by fossils. (W)

30H. History of Life (Honors)
(4) AWRAMIK, TIFFNEY

Prerequisites: concurrent enrollment in Geological Sciences 30; honors standing. Lecture, 3 hours; discussion 1 hour.

The origin and evolution of life from its beginning over 3-1/2 billion years ago to the present day. Broad introduction to the complexity and diversity of life as revealed by fossils. (W)

98. Readings in Geological Sciences
(1-3) STAFF

Prerequisite: consent of instructor.

May be repeated for credit. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Variable hours.

Critical reviews and discussions of selected geological subjects. (F,W,S)

UPPER DIVISION

100. Introduction to Geophysics
(4) ARCHULETA, LUYENDYK

Prerequisites: Geological Sciences 2 or 3; and, Mathematics 3C; and, Physics 1, 2, and 3 (may be taken concurrently) or, Physics 6A, 6B, and 6C (may be taken concurrently). Lecture, 3 hours; discussion, 1 hour.

Survey of major topics in geophysics at an elementary level; the figure of the earth, its gravitational and magnetic fields, seismology and the deep structure of the earth, heat flow, methods of geophysical exploration. The geophysical basis of plate tectonics and sea floor spreading. (S)

102A. Igneous Petrology
(3) SPERA

Prerequisites: Mathematics 3A; and Geological Sciences 14. Lecture, 3 hours.

Introduction to the occurrence, associations, tectonics, and petrogenesis of plutonic and volcanic rocks. Introduction to the physical chemistry of magma systems; magmatic crystallization and differentiation; pluton emplacement, volcanic eruption mechanisms.

102AL. Igneous Petrology Laboratory
(1) SPERA

Prerequisites: Geological Sciences 14, 14X, and 102A (may be taken concurrently). Lab, 3 hours.

An introduction to the classification and identification of igneous rocks, studied with the petrographic microscope and in-hand specimen.

102B. Sedimentary Petrology
(3) BOLES

Prerequisites: Mathematics 3A; and Geological Sciences 14. Lecture, 3 hours.

The texture, mineralogy, classification, and primal structure of sedimentary rocks and their significance in relation to regional setting, environment of deposition, and postdepositional history. Field study will emphasize interpretation of sedimentary sequences.

102BL. Sedimentary Petrology Laboratory
(1) BOLES

Prerequisites: Geological Sciences 14, 14X, and 102B (may be taken concurrently). Lab, 3 hours.

Practical experience in identification of sedimentary rocks, using the petrographic microscope.

102C. Metamorphic Petrology
(3) HACKER

Prerequisites: Mathematics 3A; and Geological Sciences 14 and 14X. Lecture, 2 hours.

An introduction to the occurrence and petrogenesis of metamorphic rocks. Grades and types of metamorphism, metamorphic reactions, phase diagrams, geothermometers, protoliths, and relation to tectonics.

102CL. Metamorphic Petrology Laboratory
(1) HACKER

Prerequisites: Geological Sciences 14, 14X, and 102C (may be taken concurrently). Lab, 3 hours.

An introduction to the identification of metamorphic rocks, studies in hand specimen and with the petrographic microscope.

103. Fundamentals of Structural Geology
(4) GANS, SYLVESTER

Prerequisites: Mathematics 3A-B-C; and, Physics 1 or 6A; and, Geological Sciences 104A or 122. Lecture, 3 hours; laboratory, 3 hours.

Deformation of rocks—faulting, folding and flow. Theory and observations at scales ranging from mountain belts to microscopic. (W)

104A. Field Studies in Geological Methods
(4) SYLVESTER

Prerequisites: Geological Sciences 2 and 3 and consent of instructor.

Introduction to the methods of geological observations and interpretations, with an emphasis on understanding earth processes in the field and reconstructing the physical history of the earth; the stratigraphic, petrologic, and structural relations of rocks; geologic report writing. (F)

104AH. Field Studies Honors Tutorial
(1) SYLVESTER

Prerequisites: concurrent enrollment in Geological Sciences 104A; honors standing; consent of instructor.

Not open for credit to students who have completed Geological Sciences 104AX. Field, 1.5 hours.

Adjunct tutorial course with Geological Sciences 104A; emphasis on comprehensive report preparation, writing, illustration related to geologic mapping in the field. (F)

104B. Field Methods
(4) BOLES, SYLVESTER, GANS

Prerequisites: Mathematics 3A-B-C; Geological Sciences 14; Geological Sciences 103 with a grade of C- or better; and, Geological Sciences 102A or 102B. Field, 6.5 hours; laboratory, 6.5 hours.

Geologic mapping on topographic maps and aerial photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports. (S)

108. Clastic Depositional Environments
(4) BUSBY

Prerequisites: Geological Sciences 14, 114A and 114B (may be taken concurrently). Lecture, 3 hours; field, averages 3 hours.

Review of sandstone depositional models including eolian, fluvial, deltaic, shoreline, shelf, and turbidite fan models. Use of facies models for observation, prediction, and hydrodynamic interpretation. Tectonic controls on the nature and distribution of sedimentary facies. Paleogeographic reconstructions and sedimentary evolution of strike-slip, rift, foreland, and arc-related basins.

109. Geology of California
(3) HOPSON

Prerequisite: Geological Sciences 2 and 3.

Recommended preparation: concurrent enrollment in Geological Sciences 109A. Lecture, 3 hours.

Introduction to the geology, geological history, tectonic evolution, and landscape development of California. A brief survey of California's petroleum, mineral, geothermal, and water resources.

109A. Geology of California Field Trips
(1) HOPSON

Prerequisite: concurrent enrollment in Geological Sciences 109. Field, 3 hours.

Geological field trips coordinated with Geological Sciences 109 to illustrate the Proterozoic, Paleozoic, Mesozoic, and Cenozoic tectonic evolution of California. Three one-day field trips, and one two-day weekend trip.

111. Principles of Paleontology
(3) TIFFNEY

Same course as EEMB 136. Not open for credit to students who have completed Biology 111.

Recommended preparation: a beginning biology course. Letter grade required for majors. Lecture, 3 hours.

The ecologic structure and evolution of the biosphere as illustrated by the fossil record. (W)

111L. Principles of Paleontology Laboratory
(2) TIFFNEY

Prerequisite: Geological Sciences 111 (may be taken concurrently).

Same course as EEMB 136L. Not open for credit to students who have completed Biology 111L. Letter grade required for majors. Laboratory, 6 hours.

Laboratory and field exercises and projects in the identification and interpretation of fossil taxa and fossil communities. (W)

113. Engineering Geology
(4) KELLER

Prerequisites: Mathematics 3A-B or 34A-B; and, Physics 1 or 6A; and upper-division standing. Lecture, 3 hours; field, 2 hours.

Application of geologic principles to civil engineering problems in soils, hydrology, earthquakes, landslides, coastal processes, dam and highway construction, and construction materials. (Offered alternate years.)

116. Pre-Phanerozoic Biogeology
(2-4) AWRAMIK

Prerequisite: upper-division standing. Seminar, 2 hours; discussion 1 hour; laboratory, 1 hour.

Problems in pre-Phanerozoic biogeology. Topically oriented seminar, discussion and laboratory dealing with the nature of the early biosphere, atmosphere, and hydrosphere. Emphasis on the fossil record, both stromatolites and microfossils.

117. Earth Surface Processes and Landforms
(4) KELLER

Prerequisite: Geological Sciences 3 or Geography 3B. Lecture, 3 hours; field trips.

Introduction to the theory of landscape evolution and the study of the processes that create and modify landforms. (F)

118. Summer Field Geology
(12) STAFF

Prerequisites: Geological Sciences 104B; two courses from Geological Sciences 102A-B-C; and Geological Sciences 103. All prerequisites with a grade of C- or better.

Intensive hands-on training in the collection, interpretation, and presentation of geologic field data. Preparation of geologic maps, sections, and a professional report as tools to understanding geologic processes. Area and focus of investigation will change each year. (SS)

119. Field Investigations in Geology
(S-9) STAFF

Prerequisites: Geological Sciences 103 and 104B both with a grade of C or better.

Selected field areas are investigated as research problems. Content varies from year to year. (SS)

120. Field Paleobiology
(1-4) AWRAMIK

Prerequisite: Geological Sciences 111-111L.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major. Seminar, 2 hours; laboratory, 2 hours.

Paleontologic field studies in selected areas. Studies include collection, identification, and description of fossils, their systematics, paleoecology, and biostratigraphy.

121. Principles of Evolution
(4) STAFF

Prerequisites: MCDB 1A-B and EEMB 2A; or, Geological Sciences 2 and 3.

Same course as EEMB 131. Not open for credit to students who have completed Biology 131. Lecture, 3 hours; discussion, 1 hour.

A foundation course concerning the mechanisms of evolution at micro- and macroevolutionary levels, and interpretation of the resulting patterns of adaptation and organic diversity.

122. Sedimentation and Stratigraphy: Processes and Products
(4) BUSBY

Prerequisites: Geological Sciences 2, 3, and 14.

Letter grade required for majors. Lecture 3 hours; field trips.

Transport/depositional processes, sedimentary textures and structures. Sedimentary environments and use of facies models for observation and prediction. Principles of lithostratigraphy, biostratigraphy, chronostratigraphy, and magnetostratigraphy. Seismic stratigraphy and sequence stratigraphic principles. Controls of tectonics, sediment supply and eustacy on sedimentation.

123. The Solar System
(4) SPERA

Recommended preparation: Geological Sciences 2 and Astronomy 1 or 2. Lecture, 3 hours; discussion, 1 hour.

The nature and evolution of the planets of the solar system. Elementary treatment of cosmochemistry, meteoritics, and comparative planetology with special reference to current ideas on solar system evolution. (F)

124A. Aqueous Geochemistry
(2) LEA

Prerequisite: Chemistry 1C. Lecture, 3 hours; discussion, 1 hour.

An introduction to the geochemistry of natural waters. Covers solution thermodynamics and equilibria, the carbonate system and pH control, redox reactions, rock weathering and the hydrological cycle, and controls on the composition of fresh and salt waters. This is a five week course.

124G. Geochronology
(2) MATTINSON

Prerequisites: Chemistry 1C; Mathematics 3A; and, Geological Sciences 2 or 3 or 4 or 4S. Lecture, 3 hours; discussion, 1 hour.

Principles of radiogenic isotope geochronology, and applications of the major geochronological methods to terrestrial and extra-terrestrial problems ranging from global climate change to petrology to tectonics to solar system evolution. This is a five week course.

124IT. Isotope Tracer Geochemistry
(2) MATTINSON

Prerequisites: Chemistry 1C; Mathematics 3A; and, Geological Sciences 2 or 3 or 4 or 4S. Lecture, 3 hours; discussion, 1 hour.

Introduction to thermodynamics and kinetics of rock-water systems. Calculation of mineral equilibria as a function of pressure temperature and fluid compositions. Applied problems at surface and subsurface conditions. This is a five week course.

124SI. Stable Isotope Biogeochemistry
(2) DENIRO

Prerequisites: Chemistry 1C; Mathematics 3A; and Geological Sciences 2. Lecture, 3 hours; discussion, 1 hour.

Principles of mass spectrometry. Expression of isotope ratios and fractionations. Principles and applications of isotopes relating to waters, minerals, and both biogenic organic and inorganic matter. This is a five week course.

124T. Introductory Thermodynamics
(2) BOLES, HACKER

Prerequisites: Chemistry 1C; Mathematics 3C; and Geological Sciences 2. Lecture, 3 hours; discussion, 1 hour.

The quantitative basis for mineral stability in terms of fluid composition, temperature, and pressure. Allows prediction of reaction equilibria at any geologic condition. Calculations are based on applied examples from water-rock interaction at surface and subsurface conditions. This is a five week course.

129. Conflict as the Motor Driving Scientific Advances
(4) DENIRO

Recommended preparation: high school chemistry and mathematics. Lecture, 3 hours; discussion, 1 hour.

Examination of the role of conflict viewed from a psychological and sociological perspective as the driving force for scientific advancement in the specific case of stable Isotope paleodendroclimatology.

133. Summer Field Geophysics
(S-12) LUYENDYK

Prerequisite: Geological Sciences 100 or 136 or 137 or 138 or 139.

A field practicum in exploration geophysics employing magnetic, gravity, electric, and seismic methods. An exploration target will be investigated for six weeks in the western United States. Interpretive report required. (SS)

134. Introduction to Geological Data Analysis Using the Microcomputer
(4) PROTHERO

Prerequisites: Mathematics 3A-B-C.

Recommended preparation: PSTAT 5AA-ZZ. Lecture, 3 hours; laboratory, 6 hours.

The Macintosh microcomputer as a tool for applying the theory and techniques of geological data analysis. Elementary programming to model statistical processes. Statistical inference, error propagation, plotting, and curve fitting are treated using simulations and geological examples.

136. Geophysics (Seismology)
(5) ARCHULETA

Prerequisites: Mathematics 3A-B-C; and, Physics 6A-B-C, or Physics 1 and 2.

Recommended preparation: Mathematics 5A (may be taken concurrently). Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours.

Wave propagation in an elastic medium; reflection and refraction, attenuation. Physics of the earthquake source, magnitude, seismic moment and focal mechanisms. (F)

137. Geophysics (Gravity and Geomagnetism)
(4) STAFF

Prerequisites: Mathematics 3A-B-C; and, Physics 1, 2, and 3.

Recommended preparation: Mathematics 5A. Lecture, 3 hours; discussion, 1 hour.

The earth's gravity and magnetic fields, gravity and magnetic anomalies and their implications in oil and mineral exploration and plate tectonics. (W)

138. Geodynamics
(3) STAFF

Prerequisites: Mathematics 3A-B-C; and, Physics 1, 2, 3, and 4.

Recommended preparation: Mathematics 5A-B. Lecture, 3 hours.

The Earth's interior structure and its dynamics. Use of geomagnetism, gravity, elasticity theory, fluid dynamics, and theory of heat transfer to understand tectonic processes. Emphasis on problem solving. (S)

139. Reflection Seismology
(4) LUYENDYK

Prerequisites: Mathematics 3C; Physics 2; and Geological Sciences 103. Lecture, 3 hours; laboratory, 3 hours.

A review of the modern methods of hydrocarbon exploration by reflection seismology, including physical principles of reflections, data acquisition, processing, and interpretation. Laboratory exercises focus on the interpretation of real data.

141. Plant Paleobiology
(3) TIFFNEY

Prerequisites: Geological Sciences 111 or EEMB 136; upper-division standing in biological sciences.

Same course as EEMB 137. Not open for credit to students who have completed Botany 110. Letter grade required for majors. Lecture, 3 hours.

Examination of the history of land plants; the systematics, morphology, and phylogeny of major groups. Major evolution and biogeographic patterns. (S)

141L. Plant Paleobiology Laboratory
(1) TIFFNEY

Prerequisite: Geological Sciences 141 (may be taken concurrently).

Same course as EEMB 137L. Not open for credit to students who have completed Botany 110L. Letter grade required for majors. Laboratory, 3 hours.

Anatomy, morphology, and systematics of fossil plants from the specimens. (S)

148. Vertebrate Paleontology
(4) WYSS

Prerequisite: Geological Sciences 2 or 3 or 7 or 30 or MCDB 1A-AL.

Same course as EEMB 109. Not open for credit to students who have completed Zoology 109. Lecture, 3 hours; discussion, 1 hour.

Introduction to the history of vertebrate life, with emphasis on the phylogenetic relationships of the major vertebrate groups. (S)

149. The History of Mammals
(4) WYSS

Prerequisite: Geological Sciences 3 or 7 or 11 or 30, or MCDB 1A-AL. Lecture, 3 hours; discussion, 1 hour.

Introduction to the diversity of fossil and living mammals from phylogenetic, stratigraphic, and paleobiogeographic perspectives.

150. Petroleum Geology
(2) BOLES

Prerequisites: Geological Sciences 2, 14, 102B, and 124T. Lecture, 2 hours; discussion, 1 hour.

Study of petroleum systems including origin, generation, migration, and trapping of hydrocarbons. Guest speakers from industry. Lab includes use of basin analysis software from oil company. Field trip to active petroleum basin in California. Required written report.

152. Analytical Methods in Earth and Material Science
(3) HACKER

Prerequisites: Mathematics 3C; and, Physics 3 or 6C; and Chemistry 1C; and Geological Sciences 14. Lecture, 3 hours.

Introduction to compositional, structural, and textural analysis: x-ray flourescence, electron and proton probes, Raman and infrared spectroscopy, x-ray and electron diffraction, scanning and transmission electron microscopy, and mass spectrometry (secondary ion, accelerator, thermal ionization, inductively coupled plasma, and stable isotope).

154. Advanced Igneous Petrology
(4) SPERA

Prerequisite: Geological Sciences 102A.

The study of magma dynamics and igneous rocks including petrogeny with an emphasis on petrography, physical chemistry and dynamics. (Offered alternate years.)

155. Petrotectonics
(3) HACKER

Prerequisites: Geological Sciences 14, 14X, 102C, and 102CL.

May be repeated for credit to a maximum of 6 units.

Recommended preparation: Geological Sciences 124T. Lecture, 3 hours.

Analysis of orogenic belts using petrography, thermochronology, and thermobarometry. Subject material changes each year.

155L. Petrotectonics Lab
(1-2) HACKER

Prerequisites: Geological Sciences 14, 14X, 102C, and 102CL; concurrent enrollment in Geological Sciences 155.

May be repeated for credit to a maximum of 4 units. Laboratory, 3-6 hours.

Analysis of orogenic belts using petrography, structural patrology, thermochronology, and thermobarometry.

156. Tectonic Controls on Sedimentation
(3) BUSBY

Prerequisite: consent of instructor.

Origin and evolution of sedimentary basins. Discussion of assigned papers on selected topics, including sedimentation in strike-slip basins, foreland basins, arc-trench systems, rift margins and aulacogens. Short term-paper required. Content of course will vary year to year.

157. Plate Tectonics
(4) ATWATER

Prerequisites: Geological Sciences 2; upper-division standing.

Recommended preparation: one year of university-level mathematics and physics. Lecture, 3 hours; laboratory, 3 hours.

Introduction to sea floor spreading, plate tectonics, and continental drift. Geometry and evolution of present day plates. Measurement and calculation of plate motions. Geophysical and geological implications of resulting relative motions at plate boundaries. (S)

157X. Advanced Plate Tectonics Seminar
(1) ATWATER

Prerequisite: Geological Sciences 157 (may be taken concurrently). Seminar, 3 hours.

Discuss current research in plate tectonics. Supplements material covered in Geological Sciences 157. (S)

158. Advanced Structural Geology
(5) GANS

Prerequisites: Geological Sciences 103 and 104B. Lecture, 2 hours; laboratory, 3 hours; field 3 hours.

Analysis of geologic structures—theory and practice. Rock deformation as a function of crustal environment. Fault mechanics and earthquakes; mineral deformation mechanisms; microstructures, and tectonite fabrics. Finite strain measurement and interpretation of kinematic indicators. Regional structural styles.

159A. Origin of the Earth
(4) SPERA

Prerequisite: Geological Sciences 123.

Not open for credit to students who have completed Geological Sciences 124C or 159.

Recommended preparation: Chemistry 1A-B-C and Geological Sciences 2 and 3. Lecture, 3 hours; discussion, 1 hour.

Origin of the Earth from the perspective of planetary genesis and the history of the Solar Nebula. Geochemistry and cosmochemistry of ancient solar system materials; accretion and earliest history of the Earth-Moon system.

159B. Hadean and Archean Earth History
(4) SPERA

Prerequisite: Geological Sciences 123 or 159A. Lecture, 3 hours; discussion, 1 hour.

Description and quantitative analysis of the most important physical and chemical processes on the Earth during its first two billion years. Origin of atmosphere, hydrophere, pre-biotic chemistry, evolution of magma ocean.

160. Seminar in Geology
(1-1-1) STAFF

May be repeated for credit to a maximum of 12 units. P/NP grading only.

Recommended preparation: upper-division standing. Seminar, 2 hours.

Attendance at departmental "Journal Club" (Geological Sciences 260, "Seminar in Geology") and brief written evaluations of the three papers which, in the student's judgment, were the best of the quarter. (F,W,S)

161. Marine Stratigraphy
(3) KENNETT

Prerequisite: not open to freshmen. Seminar, 2 hours; short field trips.

Extensive reading and class discussion of concepts and methods of marine stratigraphy. Included are lithostratigraphy, biostratigraphy, chemostratigraphy, magnetostratigraphy, and chronology. Stratigraphic nomenclature. Problems and advances in correlation and dating of sediments including the Pacific, California, and Europe. Term paper.

162. Marine Micropaleontology and Paleobiology
(4) KENNETT

Prerequisite: upper-division standing.

Not recommended for non-majors. Lecture, 2 hours; laboratory, 2 hours.

A survey of the major marine microfossil groups of the Cenozoic and Mesozoic; with particular reference to classification, preservation, evolution, stratigraphic utility, paleobiology, biogeography, paleoceanographic relations and sediment accumulation.

164A. Earth System Geology
(4) HAYMON, MACDONALD

Not open for credit to students who have completed Geological Sciences 105.

Recommended preparation: Geological Sciences 2 or 4. Lecture, 3 hours; discussion 2 hours.

The geologic features of the world's ocean basins and continents emphasizing advances in marine geology and taught from the viewpoint of plate tectonics as the unifying theory of the Earth's geodynamic processes. (F)

164B. Earth System Ocean-Atmosphere
(4) LEA

Prerequisite: Chemistry 1C.

Recommended preparation: Geological Sciences 124A. Lecture, 3 hours; discussion 1 hour.

An introduction to the chemistry of the oceans and atmosphere. Topics include composition of seawater, biogeochemical cycling, sediment chemistry, chemical tracers of circulation, ocean-atmosphere exchange, atmospheric photochemistry and pollution, and the impact of earth system chemical changes on climate. (W)

164C. Earth System History
(4) KENNETT

Prerequisite: upper-division standing. Lecture, 3 hours; discussion 1 hour.

Examination of: the evolution of the Earth's environmental system from Cretaceous to present day; interactions between plate tectonics and orogeny (lithosphere) and changes in ocean circulation (hydrosphere), climate (atmosphere), ice sheets (cryosphere), and life (biosphere). Global change theories. (S)

167. Climates of the Past
(3) LEA

Prerequisite: Geological Sciences 164B.

Introduction to climate and ocean history. Techniques used to reconstruct terrestrial, oceanic, and atmospheric conditions. Evolution of climate over the last million years. Theories of climate change, including Milankovich hypothesis, greenhouse effect, and internal feedback. Anthropogenic climate change.

168. Aqueous Transport of Pollutants
(4) CLARK

Prerequisite: Mathematics 3B or 34B.

Same course as Environmental Studies 168.

Recommended preparation: Environmental Studies 144.

Focus on the behavior of dissolved species in rivers. Examination of the basic advection-diffusion model. Particular emphasis on field data.

169. Tracer Hydrology
(4) CLARK

Same course as Environmental Studies 169.

Recommended preparation: Geological Sciences 173-173L or Geography 116-116L. Lecture, 3 hours; discussion, 1 hour.

Introduction to principles of chemical and isotope tracer hydrology. Emphasis on methods of groundwater dating, the use of tracers as management tools, and contaminant plume monitoring.

170. Environmental Geology
(4) KELLER

Prerequisites: Geological Sciences 3 or Geography 3B or Environmental Studies 2.

Same course as Environmental Studies 170. Lecture, 3 hours; 3-4 day field trip.

Introduction to the entire spectrum of possible interactions between people and the geologic environment with emphasis on natural hazards, resources, and land-use planning.

171. Seminar on Submarine Hydrothermal Systems
(3) HAYMON

Recommended preparation: Geological Sciences 4 or 4S. Seminar, 3 hours.

Covers observational, experimental, and theoretical studies of seafloor hydrothermal processes; emphasizes systems at oceanic spreading centers; includes global hydrothermal effects on the compositions of seawater and ocean crust; focuses on recent developments and unsolved problems.

173. Groundwater Hydrology
(4) LOAICIGA, CLARK

Prerequisites: Geography 3A-B; concurrent enrollment in Geological Sciences 173L.

Same course as Geography 116. Lecture, 3 hours.

Analysis of groundwater flow regimes; steady-state and transient systems, and geologic controls. Basic aquifer properties and yield. Surface water/ground water interaction and fundamentals of

groundwater quality. Field trips and experimental laboratory demonstrations. (W)

173L. Lab for Groundwater Hydrology
(1) LOAICIGA, CLARK

Prerequisites: Geography 3A-B; concurrent enrollment in Geological Sciences 173.

Same course as Geography 116L. Laboratory, 2 hours.

Basic groundwater flow experiments; Hele-Shaw flow simulations, hydraulic conductivity measurement, groundwater quality determination (Ph, DO, EC), and field trips for base flow measurement. (W)

180. Seminar in Volcanology
(2) SYLVESTER, WISE

Prerequisite: Geological Sciences 102A.

May be repeated for credit to a maximum of.4 units.

Seminar in current topics in volcanology. Course normally followed by a field trip to an active volcanic region.

181. Field Studies in Marine Geophysics
(2-8) MACDONALD

Prerequisite: consent of instructor.

May be repeated once, but only 8 units may be counted toward upper-division unit requirements. Lecture, 3 hours; laboratory, up to 40 hours.

Field studies in marine geophysical work with the opportunity of going to sea for up to one month. Lectures cover seismic, sonar, magnetic high resolution techniques for geologic study.

182. Field Studies in Marine Geology and Geochemistry
(2-8) HAYMON

Prerequisite: consent of instructor. Lecture, 3 hours; Laboratory, up to 3 hours; field, up to 40 hours.

Marine geochemistry with the opportunity of going to sea or into the field on land. Lectures cover techniques of seafloor mapping using bottom photography, marine geochemical sampling, and methods of data reduction and sample analysis. Labs include analysis of data/samples collected.

183. Advanced Field Mapping and Geologic Investigations
(3) GANS

Prerequisite: Geological Sciences 118. Discussion, 3 hours; field 5 hours.

Research oriented mapping projects to solve outstanding problem(s) in a geologically significant area. Two weeks in the field, followed by compilation and complimentary laboratory studies. Weekly meetings to discuss results.

185. Physical Volcanology
(4) GANS

Prerequisite: Geological Sciences 14, 102A, and 104A. Lecture, 2 hours; lab, 3 hours; field, 3 hours.

Overview of volcanic processes, including physical properties of melts, eruptive mechanisms, classification of volcanic deposits, and volcanic-tectonic environments. Lecture emphasizes theoretical aspects of volcanic processes, lab examines major classes of volcanic rocks, field trips emphasize mapping in volcanic terrains.

187. Introduction to Teaching in Geological Sciences
(1-S) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 8 units but only 4 units may be applied toward the major.

Students will assist instructor in teaching course in which the student previously received a grade of A- or better. Activities will be determined in consultation with the instructor and may include assisting in laboratories, tutorials, discussion sections and field trips.

188. Field Studies in Neotectonics
(1-3) SYLVESTER

Prerequisites: Geological Sciences 103-103L; senior standing; and consent of instructor.

May be repeated for credit to a maximum of 3 units. Tutorial, 1/2-1 hour; field, 2-4 hours.

Geodetic measurement of recent crustal movements around active faults and volcanoes. Includes techniques and analyses of precision levelling, triangulation, trilateration, and tiltmetry. Field work arranged as opportune. Term paper required if taken for 3 units. (F,W,S)

189. Seminar in Paleobiology
(1-4) AWRAMIK, TIFFNEY, WYSS

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units. Seminar, 2-3 hours.

Undergraduate seminar in advanced paleobiology involving reading and group discussion of current literature. Option to (with faculty consent) write research papers of varying length.

190. Advanced Studies in Paleobiology
(1-4) AWRAMIK, TIFFNEY, WYSS

May be repeated for a maximum of 12 units. Laboratory, 3-12 hours.

Designed to meet the interests and needs of individual students. Selected readings and laboratory work in systematic paleontology; field studies of recent or fossil biotas; animal-substrate relations, biostatistics, etc. (F,W,S)

191. Senior Thesis in Geology
(1-8) STAFF

Prerequisites: upper-division standing; consent of instructor; geological Sciences majors only.

May be repeated for credit to a maximum of 12 units, but only 8 units may be applied toward the major.

Coursework shall consist of faculty supervised research and writing of a senior thesis.

192. Field Internship in Engineering Geology
(1-4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major. Field, 1-4 hours.

Individualized, practical approaches to problems in engineering geology by working under faculty supervision as interns with local or state agencies or private organizations. Students spend most of their effort in carrying out fieldwork, but prepare written reports.

194. Group Studies for Advanced Students
(1-S) STAFF

Prerequisites: upper-division standing; consent of the instructor.

May be repeated for credit but no more than 5 units will apply to the major. Variable hours.

Intensive research or study by a small group of advanced students who share an interest in a topic not included in the regular departmental curriculum.

195H. Honors Field Studies
(1-8) STAFF

Prerequisites: geology and geophysics majors only; consent of instructor. Variable hours.

May be repeated for credit to a maximum of 8 units.

Fieldwork in selected areas under the direction of a faculty member. Final report required.

196HA-HB-HC. Senior Honors Thesis
(4-4-4) STAFF

Prerequisites: geology and geophysics majors only; consent of instructor.

A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Geological Sciences 196HC. Laboratory, variable; research, variable.

Three quarter individual research project under the direction of a faculty member. Oral defense of written thesis required. (F,W,S)

197H. Honors Seminar in Geology
(1) STAFF

Prerequisites: honors standing; consent of instructor.

May be repeated for credit to a maximum of 4 units. Discussion, 1 hour.

Bimonthly, two-hour seminar to discuss advanced topics in the geological sciences. Guest speakers. (F,W,S)

198. Readings in the Geological Sciences
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in geology; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be taken more than once at the option of the student; not more than 4 units may be included in the minimum requirements for the major. Registration after opening day of the quarter is not permitted. Tutorial, variable hours.

Critical reviews and discussions of selected geological subjects. (F,W,S)

199. Independent Studies in Geology
(1-S) STAFF

Prerequisites: upper-division standing in the major; consent of department and instructor.

Students must have a minimum 3.0 grade-point average. Petition required. Students are limited to 5 units per quarter; 15 units per year; and up to 30 units total in all 98/99/198/199/199RA courses combined.

Course shall consist of academic research supervised by a faculty member. This course is not intended for internship credit. (F,W,S)

199RA. Independent Research Assistance in Geological Sciences
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division Geological Sciences courses; consent of instructor.

Students must have a 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance. (F,W,S)

GRADUATE COURSES

200. Introduction to Geophysics
(4) LUYENDYK

Prerequisite: consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Survey of major topics in geophysics at an elementary level; the figure of the earth, its gravitational and magnetic fields, seismology and deep structure of the earth, heat flow, methods of geophysical exploration. The geophysical basis of plate tectonics and sea floor spreading. Term paper. (S)

201A. Graduate Research and Field Seminar
(4) STAFF

Required of all entering graduate students. Seminar, 2 hours.

Faculty research projects will be presented in a series of evening seminars. Student research projects will be initiated. Three weekend field trips will sample field research in southern California. (F)

201B. Graduate Research Seminar
(4) LUYENDYK

Prerequisites: Geological Sciences 201A; graduate standing in the department of Geological Sciences.

Required course for all first year graduate students.

How research is conducted in geological sciences; identifying significant problems; designing the experiment; how to obtain funding and how to write and evaluate a research proposal, including a budget.

203. Field Seminar in Pyroclastic Rocks
(4) STAFF

Prerequisite: consent of instructor. Seminar, 2 hours; laboratory, 6 hours; one 4-week field trip.

Advanced topics in the genesis and significance of pyroclastic flows, surges, and fallout tuffs. Field research in Cordilleran North America supplemented by laboratory studies, classroom discussions of published literature, and student reports on special topics related to student field research.

206. Volcaniclastic Rocks and Sediments
(1-4) STAFF

Prerequisite: consent of instructor. Lecture, 2 hours; laboratory, 6 hours; field, 4 hours.

Genesis and description of volcaniclastic rocks—pyroclastic, hyaloclastic, and epiclastic. Dispersal and depositional mechanisms, including subaerial and submarine varieties.

207. Diagenesis of Clastic Rocks
(3) BOLES

Prerequisites: Geological Sciences 50, 51, 102B, and 124. Lecture, 2 hours; laboratory, 3 hours.

Diagenesis of volcanic tuffs, sandstones, and shales. Course emphasizes controls of pressure, temperature, and solution chemistry to diagenesis. Laboratory includes application of thin section, x-ray diffraction, cathode luminescence to solving diagenetic problems.

208. Clastic Depositional Environments
(4) BUSBY

Prerequisite: Geological Sciences 102B. Lecture, 3 hours; field, variable.

Review of sandstone depositional models including eolian, fluvial, deltaic, shoreline, shelf, and turbidite fan models. Use of facies models for observation, prediction, and hydrodynamic interpretation. Tectonic controls on the nature and distribution of sedimentary facies. Paleogeographic reconstructions and the sedimentary evolution of strike-slip, rift, foreland, and arc-related basins.

209. Tectonic Controls on Sedimentation
(3) BUSBY

Prerequisite: consent of instructor. Seminar, 3 hours; preparation, 6 hours.

Origin and evolution of sedimentary basins. Discussion of assigned papers on selected topics, including sedimentation in strike-slip basins, foreland basins, arc-trench systems, rift margins and aulacogens. Term paper required. Content of course will vary year to year.

210. Paleoecology
(1-4) TIFFNEY

Prerequisite: consent of instructor. Discussion, 3 hours.

Reading and discussion of the interactions of organisms and organisms, and of organisms and the environment, in the fossil record. Specific topics vary. Term paper required if taken for four units.

213. Geochemistry II
(1-4) MATTINSON

Prerequisites: Chemistry 1C, Mathematics 3C, and Geological Sciences 2.

An introduction to the geochemistry of the Earth and solar system; especially applications of radiogenic isotopes to problems of magma genesis and age determination. Presentation of a seminar or term paper selected in consultation with instructor is required.

214. Marine Geophysics and Tectonics
(2-4) MACDONALD

Prerequisite: consent of instructor. Seminar, 3 hours; discussion, 1 hour.

Current discoveries and unsolved problems in marine geophysics. Instruments and methods of study. Appropriate for majors in geology and geophysics.

215. Pre-Phanerozoic Biogeology
(2-4) AWRAMIK

Prerequisites: advanced standing in geological or biological sciences; consent of instructor. Seminar, 2 hours; discussion, 1 hour; laboratory, 1 hour; field trip.

Problems in pre-Phanerozoic biogeology. Topically oriented seminars, discussions, and laboratories dealing with the nature of the early biosphere, atmosphere, and hydrosphere. Emphasis on the fossil record, both stromatolites and microfossils.

216A. Stable Isotopy of Biogenic Materials
(4) DE NIRO

Prerequisites: graduate standing; consent of instructor. Seminar, 3 hours.

Directed reading and weekly seminar in stable isotopy of biogenic materials and its application to biology, archaeology, paleontology, and paleoecology.

216B. Stable Isotopy of Biogenic Materials Lab I
(4) DE NIRO

Prerequisite: Geological Sciences 216A. Laboratory, 4 hours.

Elementary laboratory techniques for determination of stable isotope ratios in biogenic materials.

216C. Stable Isotopy of Biogenic Materials Lab II
(4) DE NIRO

Prerequisite: Geological Sciences 216B. Laboratory, 4 hours.

Advanced laboratory techniques for determination of stable isotope ratios in biogenic materials.

220. Biogeology
(2-4) AWRAMIK

Prerequisite: consent of instructor. Seminar, 2 hours; laboratory, 2 hours.

Advanced topics in biogeology. Deals primarily with Phanerozoic and contemporary problems bearing on the interpretation of global history. Emphasis will be on student projects designed to develop research skills and techniques.

221. Seminar in Petrofabrics
(4) SYLVESTER

Prerequisites: Geological Sciences 102, 102AL, 102C, 102CL and 103. Lecture, 2 hours; laboratory, 6 hours.

Consideration of theoretical, experimental, and empirical aspects of microscopic analysis of metamorphic tectonites. (On demand)

222. Advanced Topics in Stratigraphy
(4) BUSBY

Prerequisite: consent of instructor. Lecture, 3 hours; field trips.

Current topics in stratigraphy with emphasis on paleogeographic/tectonic reconstructions. Field research in Cordilleran United States or Mexico, supplemented by laboratory studies and classroom discussion of published literature. Content of course will change from year to year.

224SI. Stable Isotope Biogeochemistry
(2) DENIRO

Prerequisites: Chemistry 1C and Mathematics 3C.

Principles of mass spectrometry. Expression of isotope ratios and fractionations. Principles and applications of isotopes relating to waters, minerals, and both biogenic organic and inorganic matter.

225. Advanced Igneous Petrology
(4) SPERA

Prerequisite: Geological Sciences 240A. Lecture, 3 hours; discussion, 1 hour.

The study of magma dynamics and igneous rocks including petrogeny with an emphasis on petrography, physical chemistry, and dynamics. (Offered alternate years.)

228. Advanced Radiogenic Isotope Geology
(2-4) MATTINSON, GANS

Current topics in geochronology and radiogenic isotope tracers, and their application to geologic problems. Content varies from year to year. Students present seminar or complete lab project for 3 or 4 units.

235. Plate Tectonics Seminar
(2-4) ATWATER

Attend lectures with Geological Sciences 157. Lecture, 3 hours, seminar, 1 hour.

Read recent related articles. Students present and discuss selected topics in separate seminar. Complete term paper and/or problem sets for 3 or 4 units. (S)

236. Geophysics (Seismology)
(S) ARCHULETA

Prerequisites: one year of colledge level calculus and physics.

Recommended preparation: Mathematics 5A (may be taken concurrently).

Wave propagation in an elastic medium; reflection and refraction, attenuation. Physics of the earthquake source, magnitude, seismic moment and focal mechanisms. (F)

238. Geodynamics
(3) TANIMOTO

Prerequisites: Mathematics 5A-B-C; and Geological Sciences 200. Lecture, 3 hours.

The earth's interior structure and its dynamics. Use of geomagnetism, gravity, elasticity theory, fluid dynamics, and theory of heat transfer to understand tectonic processes. Emphasis on problem solving.

239A. Origin of the Earth
(4) SPERA

Prerequisite: consent of instructor.

Not open for credit to students who have completed Geological Sciences 239. Lecture, 3 hours; discussion, 1 hour.

Origin of the Earth from the perspective of planetary genesis and the history of the Solar Nebula. Geochemistry and cosmochemistry of ancient solar system materials; accretion and earliest history of the Earth-Moon system.

239B. Hadean and Archean Earth History
(4) SPERA

Prerequisite: consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Description and quantitative analysis of the most important physical and chemical processes on the Earth during its first two billion years. Origin of atmosphere, hydrophere, pre-biotic chemistry, evolution of magma ocean.

240A. Mineralogical Thermodynamics
(3) SPERA

Prerequisite: elementary thermodynamics or physical chemistry. Lecture, 3 hours.

Derivation of thermodynamic equations of state for minerals and fluids. Thermodynamics of ideal and nonideal crystalline solutions. Development and application of thermodynamic data bases. Characterization of physical conditions for metamorphic and igneous rocks. (Offered alternate years.)

240B. Geochemical Transport Phenomena
(3) SPERA

Prerequisite: Geological Sciences 240A. Lecture, 3 hours.

Introduction to the thermodynamics of irreversible processes including macroscopic and microscopic formulations. Topics include phase transitions (nucleation and growth), multicomponent diffusion and reaction kinetics. Treatment of heat, mass, and momentum transport in viscous fluids and porous media. (Offered alternate years.)

241. Plant Paleobiology
(4) TIFFNEY

Examination of the history of land plants; the systematics, morphology, and phylogeny of major groups. Major evolutionary and biogeographic patterns. Extra readings and paper.

243. The History of Mammals
(4) WYSS

Prerequisite: Geological Sciences 3 or 7 or 11 or 30 or MCDB 5A-AL.

Introduction to the diversity of fossil and living mammals from phylogenetic, stratigraphic, and paleobiogeographic perspectives. Required research paper.

245. Seminar in Neotectonics
(3) SYLVESTER

Prerequisites: Geological Sciences 103 or 103L; consent of instructor. Seminar, 3 hours; field trips.

Observation, interpretation, and significance of Holocene, historic, and current crustal movements caused by faulting, volcanism, subsidence, hydrocompaction, and isostatic adjustments.

247. Seminar in Quaternary Geology
(3) KELLER

Prerequisite: Geological Sciences 117.

May be repeated for credit. Discussion, 3 hours; field.

Selected topics in quaternary geology. Subject matter will change from year to year.

248. Vertebrate Paleontology
(4) WYSS

Lecture, 3 hours; laboratory, 1 hour.

Introduction to the history of vertebrate life, with emphasis on the phylogenetic relationships of the major vertebrate groups. Paper required. (S)

249. Seminar in Structure and Tectonics
(4) SYLVESTER

Prerequisite: Geological Sciences 201. Seminar, 3 hours.

Topical structural geology and tectonics.

250. Petroleum Geology
(2) BOLES

Recommended preparation: Geological Sciences 14, 102B, and 124IT. Lecture, 2 hours; discussion, 1 hour.

Study of petroleum systems including origin, generation, migration, and trapping of hydrocarbons. Guest speakers from industry. Lab includes use of basin analysis software from oil company. Field trip to active petroleum basin in California. Required written report.

254. Advanced Seismology Seminar
(2) ARCHULETA, TANIMOTO

Prerequisite: consent of instructor. Seminar, 2 hours.

Reading and class discussion of basic concepts and methods of seismology, current discoveries and unsolved problems.

256. Geophysical Inverse Theory
(3) PROTHERO, TANIMOTO

Prerequisites: Geological Sciences 136; consent of instructor. Lecture, 3 hours.

Introduction to basic concepts of inverse theory such as resolution, error and its trade-off. Application to earth structure study, earthquake source, geodetic data and magnetic field. Reading on key papers. Term paper.

258. Advanced Structural Geology
(5) GANS

Prerequisites: Geological Sciences 103 and 104B; or, consent of instructor. Lecture, 2 hours; laboratory, 2 hours; field, 3 hours.

Analysis of geologic structures—theory and practice. Rock deformation as a function of crustal environment. Fault mechanics and earthquakes; mineral deformation mechanisms, microstructures, and tectonite fabrics. Finite strain measurement and interpretation of kinematic indicators. Regional structural styles.

259. Paleomagnetism and Tectonics
(3) LUYENDYK

Seminar, 3 hours; preparation, 6 hours.

Readings and discussion on topics concerning the tectonics of the Pacific rim, and especially the western U.S. Cordillera, as approached by the paleomagnetics method.

260. Seminar in Geology
(1) STAFF

Required of all first year graduate students. May be repeated for credit. P/NP grading only. Seminar, 1 hour.

Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. Students will present material reflecting their interests in geology for critical appraisal, of both content and manner of presentation, by selected members of the seminar. Emphasis will be placed on assisting students in developing professional speaking style. (F,W,S)

261. Marine Stratigraphy
(3) KENNETT

Prerequisites: open to graduates and qualified senior undergraduates. Seminar, 2 hours; short field trips.

Extensive reading and class discussion of concepts and methods of marine stratigraphy. Included are lithostratigraphy, biostratigraphy, chemostratigraphy, magnetostratigraphy, chronostratigraphy, and chronology. Stratigraphic nomenclature. Problems and advances in correlation and dating of sediments including the Pacific, California, and Europe. Term paper.

262. Marine Micropaleontology and Paleobiology
(4) KENNETT

Lecture, 2 hours; laboratory, 2 hours; preparation, 4 hours.

A survey of the major marine microfossil groups of the Cenozoic and Mesozoic; with particular reference to classification, preservation, evolution, stratigraphic utility, paleobiology, biogeography, paleoceanographic relations, and sediment accumulation.

263. Paleoceanography and Marine Sediments
(4) KENNETT

Lecture, 3 hours; preparation, 6 hours.

Evolution of the world's oceans through geologic time in relation to plate tectonics, circulation and water mass development, chemistry and sediment accumulation, paleoclimates and polar glaciation, and evolution of marine life. Processes of formation of marine sediments. Approaches to paleogeography.

264. Petrotectonics
(3) HACKER

Prerequisite: Geological Sciences 102C. Lecture, 3 hours.

Analysis of orogenic belts using petrography, structural petrology, thermochronology, and thermobarometry. Subject material changes each year.

264L. Petrotectonics Lab
(1-2) HACKER

Prerequisites: Geological Sciences 102C-CL; concurrent enrollment in Geological Sciences 264.

Recommended preparation: Geological Sciences 124T. Laboratory, 3-6 hours.

Analysis of orogenic belts using petrography, structural petrology, thermochronology, and thermobarometry.

265. Analytical Methods in Earth Science and Material Science
(3) HACKER

Prerequisites: Mathematics 3C; Physics 6A-B-C; Chemistry 1C; and Geological Sciences 14. Lecture, 3 hours.

Introduction to compositional, structural, and textural analysis: x-ray flourescence, electron and proton probes, Raman and infrared spectroscopy, x-ray and electron diffraction, scanning and transmission electron microscopy, and mass spectrometry (secondary ion, accelerator, thermal ionization, inductively coupled plasma, and stable isotope).

266. Chemical Oceanography
(4) LEA

Prerequisite: Chemistry 1C.

An introduction to the chemistry of the oceans. Topics include composition and chemical equilibria of seawater, biogeochemical cycling, sediment chemistry, atmospheric exchange, circulation and rates of mixing based on chemical tracers, and the impact of ocean chemistry on climate change.

267. Climates of the Past
(3) LEA

Prerequisite: Geological Sciences 266. Lecture, 3 hours.

Introduction to climate and ocean history. Techniques used to reconstruct terrestrial, oceanic and atmospheric conditions. Evolution of climate over the last million years. Theories of climate change, including Milankovich hypothesis, greenhouse effect and internal feedback. Anthropogenic climate change.

269. Tracer Hydrology
(4) CLARK

Introduction to principles of chemical and isotope tracer hydrology. Emphasis on methods of groundwater dating, the use of tracers as management tools, and contaminate plume monitoring. Research paper required.

270. Seminar in Geologic Problems
(1-3) STAFF

Prerequisite: graduate standing. Discussion, 1-3 hours.

Review and discussion of a current problem in geology. Content is variable and depends on student interest. (On demand.)

271. Seminar on Submarine Hydrothermal Systems
(3) HAYMON

Prerequisite: Geological Sciences 124. Seminar, 3 hours; preparation, 6 hours.

Covers observational, experimental, and theoretical studies of seafloor hydrothermal processes; emphasizes systems at oceanic spreading centers; includes global hydrothermal effects on the compositions of seawater and ocean crust; focuses on recent developments and unsolved problems.

276. Geological Oceanography
(3) KENNETT

Prerequisite: graduate standing.

Geology of the oceans. Development of the oceans through geologic time. Tectonism, crustal structure and composition, sediments, and the fossil record. Paleoceanographic change in relation to earth system history including impact of the oceans on climate change.

280. Seminar in Field Geology
(1-4) STAFF

Credit is one half of 1 unit per day in the field, with a maximum of 1 unit for any trip. May be repeated for a maximum of 8 units each academic year. S/U grading. Field, variable hours.

Field trips of one day or more, organized as opportune. Appropriate report required for each trip. (On demand.)

281. Field Studies in Marine Geophysics
(2-8) MACDONALD

Prerequisite: consent of instructor. Lecture, 3 hours; laboratory, up to 40 hours.

Field studies in marine geophysics using seismic, sonar, magnetic techniques in high resolution studies of deep-sea geologic features. Normally involves going to sea for one month.

282. Field Studies in Marine Geochemistry
(2-8) HAYMON

Prerequisite: consent of instructor. Lecture, 3 hours; laboratory, up to 3 hours; field or preparation, 6-40 hours.

Studies in marine geochemistry with the opportunity of going to sea or into the field on land. Lectures cover techniques of seafloor mapping using bottom photography, marine geochemical sampling, and methods of data reduction and sample analysis. Labs include analysis of data/samples collected.

283. Advanced Field Mapping and Geologic Investigations
(3) GANS

Prerequisite: Geological Sciences 118.

Research-oriented mapping projects to solve outstanding problem(s) in a geologically significant area. Two weeks in the field, followed by compilation and complimentary laboratory studies. Weekly meetings to discuss results. Paper required.

285. Physical Volcanology
(4) GANS

Prerequisite: Geological Sciences 14, 102A, and 104A.

Recommended preparation: Geological Sciences 103. Lecture, 2 hours; laboratory, 3 hours; field, 3 hours.

Overview of volcanic processes, including physical properties of melts, eruptive mechanisms, classification of volcanic deposits, and volcanic-tectonic environments. Lecture emphasizes theoretical aspects of volcanic processes, lab examines major classification of rocks. Graduate students must complete an independent research project.

292. Field Internship in Engineering Geology
(1-4) STAFF

Prerequisites: Geological Sciences 113; consent of instructor.

Only 4 units may apply to the graduate unit requirement for the M.A. degree. Tutorial, 1-4 hours.

Practical experience in problems in engineering geology, working under faculty supervision as interns

with local or state agencies or private organizations. Students will spend most of their effort in field research, but also will prepare written reports. (On demand.)

501. Practicum in Instruction
(1-4) STAFF
Prerequisite: concurrent teaching assistant appointment.
No unit credit allowed toward degree. Tutorial, 1-6 hours.
Practical experience in teaching in geological sciences. Student will have responsibility for one or more laboratory and/or discussion sections. Evaluations will be made by both staff and class.

502. Teaching Assistant Training
(2) STAFF
Maximum of three quarters. No unit credit allowed toward degree. Tutorial, 1-2 hours. (2 day workshop.)
Orientation and workshop in professional conduct and responsibilities. Course will involve observation of student in teaching situation (faculty visits or videotaping) and follow-up conferences, evaluations, and follow-up. (F)

503. Practicum in Research
(1-6) STAFF
Prerequisite: concurrent research assistant appointment.
No unit credit allowed toward degree. Tutorial, 1-6 hours.
Practical experience in research in the geological sciences, under supervision of faculty member.

596. Directed Reading and Research
(2-12) STAFF
Prerequisites: consent of instructor and graduate advisor.
No more than half the units necessary for the master's degree may be taken in Geological Sciences 596. Tutorial, 3-40 hours.
Individual tutorial. Written proposal for each tutorial must be approved by the instructor and the department chair. (F,W,S)

597. Individual Study for Master's and Ph.D. Examinations
(1-12) STAFF
Prerequisites: consent of instructor and graduate advisor.
No unit credit allowed toward advanced degree. Laboratory, 3-36 hours.
Instructor should be student's major professor or chair of the committee. (F,W,S)

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisites: consent of instructor and graduate advisor.
No unit credit allowed toward degree. Tutorial, 1-12 hours.
Master's thesis research and preparation. Instructor normally should be chair of the student's thesis committee. Only for research underlying the thesis, writing the thesis. (F,W,S)

599. Ph.D. Dissertation Preparation
(1-12) STAFF
Prerequisites: consent of instructor and graduate advisor. Variable hours.
Instructor normally should be chair of the student's doctoral committee. Only for research underlying the dissertation, writing the dissertation. Limited to terminal preparation. (F,W,S)

Germanic, Slavic, and Semitic Studies

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Dorothy M. Chun, Ph.D., UC Berkeley, Associate Professor (German linguistics, second language acquisition, intonation and discourse, computer-assisted language learning, language and gender)

Susan Derwin, Ph.D., The Johns Hopkins University, Associate Professor (19th- and 20th-century comparative literature, psychoanalysis, critical theory)

Gunther H. Gottschalk, Ph.D., University of Southern California, Professor (textual analysis, modern syntax, computer-based research and teaching, selected 20th-century authors)

Gerhart Hoffmeister, Ph.D., University of Maryland, Professor (baroque and romantic literature, comparative literature, German civilization)

Wolf D. Kittler, Ph.D., University of Erlangen-Nurnberg, Professor (19th- and 20th-century literature, critical theory, deconstruction, media technology)

Torborg Lundell, Ph.D., UC Berkeley, Professor (selected Scandinavian authors, Swedish language, comparative literature, folklore and fairy tales)

Katia McClain, Ph.D., UC Los Angeles, Lecturer (Slavic linguistics, discourse and pragmatics, language acquisition, language and gender, folklore, women in Eastern European culture and literature)

Larry McLellan, M.A., UC Berkeley, Lecturer (Slavic linguistics, language pedagogy)

Laurence A. Rickels, Ph.D., Princeton University, Professor (critical theory, psychoanalysis, deconstruction, 18th-, 19th-, and 20th-century literature)

Sven Spieker, Ph.D., Oxford University, Associate Professor (critical theory, psychoanalysis, deconstruction, 19th- and 20th-century literature, especially East European and Russian)

Devora Sprecher, Lecturer in Hebrew (Hebrew language pedagogy, Jewish studies)

Elisabeth Weber, Ph.D., University of Freiburg, Professor (18th- and 19th-century literature and philosophy, German-Jewish culture, deconstruction, psychoanalysis)

Katia McClain

LECTURER, GERMANIC, SLAVIC, & SEMITIC STUDIES

A passion for East European language and culture led lecturer Katia McClain to her position in the Department of Germanic, Slavic, and Semitic Studies. She teaches courses in Russian language, Russian literature, Slavic linguistics, and folklore.

"I'm not conveying knowledge as much as we're gaining knowledge together."

Her interest began in high school, she says, partly because some of her ancestors hailed from that area of the world.

McClain perceives learning as a collective effort, with her students as important a part of the educational process as she is.

"I'm not conveying knowledge as much as we're gaining knowledge together," she says.

McClain wants her students to examine their own ideas and perceptions as they explore topics that may be new to them. She approaches the study of language and literature within its social, cultural, and ideological context.

"We're not just memorizing facts," she says. "Because I work in an area that's a little less well known, I hope my students gain some knowledge they didn't have access to before."

Emeriti Faculty

Stuart Atkins, Ph.D., Yale University, Professor Emeritus

Clifford A. Barraclough, M.A., University of Washington, Lecturer Emeritus

Richard C. Exner, Ph.D., University of Southern California, Professor Emeritus

Donald B. Johnson, Ph.D., UC Los Angeles, Professor Emeritus

Albert Kaspin, Ph.D., UC Berkeley, Professor Emeritus

Roselinde Konrad, Senior Lecturer Emerita

Mstislav W. Kostruba, M.A., UC Santa Barbara, Lecturer Emeritus

Rolf N. Linn, Ph.D., UC Los Angeles, Professor Emeritus

Ursula R. Mahlendorf, Ph.D., Brown University, Professor Emerita

Harry Steinhauer, Ph.D., University of Toronto, Professor Emeritus

The Department of Germanic, Slavic, and Semitic Studies offers programs of study leading to the B.A., M.A., and Ph.D. degrees in Germanic languages and literatures, and the B.A. in Slavic languages and literatures. Students in each program acquire an appropriate linguistic background in lower-division courses, study the historical development of the language, and are exposed to the modern language in most upper-division classes. The department also offers courses in computer-aided research and instruction, and the educational uses of multimedia and hypermedia for future teachers. The curriculum for each program is designed to provide a thorough survey of the literature.

The department offers a one-year sequence in elementary Swedish and upper-division courses in translation in Scandinavian literature, folklore, and fairy tales. Germanic languages and literatures majors may find the study of Swedish language and literature useful to their major. Two years of Hebrew language courses are offered, with additional offerings in linguistics and literature. Advanced Swedish and Hebrew language instruction is also available on a tutorial basis.

Qualified students majoring in Germanic languages and literatures may spend their junior year at the University's Education Abroad Center at Goettingen. In addition, there are opportunities for students to study for a semester in Bayreuth or Berlin. Qualified students are encouraged to spend a semester at UC's Education Abroad Program in Moscow. Hebrew language and literature students are prepared for study in the University of California's Center for Education Abroad in Jerusalem. Prior study of the relevant language is either required or recommended in every case.

Undergraduate and graduate students are assigned advisors at the beginning of their studies; all advisors keep posted office hours and are available by appointment as well.

Students with a bachelor's degree in Germanic languages and literature or Slavic languages and literature who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Senior Honors Program in German

Students may request nomination for the senior honors program by filing an application form, or they may be nominated by faculty. Qualifying requirements include an overall grade-point average of at least 3.0 with 3.5 in the Germanic languages and literatures major, and at least 105 units completed, including at least two upper-division courses in German. Descriptions of program requirements and applications may be obtained in the department office.

Undergraduate Program

Bachelor of Arts—Germanic Languages and Literatures

Preparation for the major. Required with grades of C or higher: German 1, 2, 3, 4, 5, 6, or placement beyond German 6 in the departmental placement examination. German 8A-B is recommended. *Note: Students who have completed a more advanced course in a lower-division sequential series will not be permitted to take a course that is lower in the series.*

Upper-division major. Completion of one of the following emphases is required:

1. Literature. This emphasis is designed for students who are interested in a rigorous liberal arts education and for those who intend to pursue a graduate career in literary studies or library science. Forty-four upper-division units are required, including German 101A and 101B or 101C, 107A or 107B or 107C, 120 or 121 or 122 and 190. (Native speakers of German should substitute 110A-B for 101A and 101B or 101C.) The remaining electives will be selected from upper-division German offerings, with no more than 8 units from courses taught in English. Electives must include 4 units in each of the following centuries: 18th, 19th, and 20th (these courses must be taught in German).

Four units of upper-division electives may be taken in a comparative literature course provided that it is taught by a faculty member of the Department of Germanic, Slavic, and Semitic Studies. In addition to that, another 4 units of upper-division electives in related fields may be accepted into the major by petition. Courses which are taught in English, but where the readings and other requirements such as papers are done in German do not fall under this limitation.

A year of study abroad at a German-speaking institution of higher learning is highly recommended. Students who intend to pursue German at the graduate level are encouraged to supplement their major by selecting, in consultation with their department advisor, 20 units of courses from another literary, historical, or philosophical discipline.

2. German Studies. This emphasis is designed especially for students who wish to enter such fields as political science, business, or economics, the teaching credential program or a master's program with a teaching emphasis. Forty-four upper-division units are required, including German 101A and 101B or 101C (native speakers of German should substitute German 110A-B for 101A and 101B or 101C), 107A-B-C, 104 or 120, and 190. The remaining units are to be chosen from upper-division courses in German literature, culture, and language. No more than 8 units of courses taught in English and 16 units of language courses may be applied to the upper-division electives. Up to 8 units of upper-division courses in German history, art, politics, Scandinavian and/or comparative literature, may be applied to the major by petition.

A year of study abroad at a German-speaking institution of higher learning is highly recommended. Students are encouraged to supplement their major by completing 20 or more upper-division units in another discipline such as Scandinavian, political science, or history. Departmental courses in computer literacy are also recommended.

Education Abroad Program participants in either concentration should determine credit and unit limitations for their proposed work at Goettingen, Bayreuth, or Berlin in advance, from their advisors.

Bachelor of Arts—Slavic Languages and Literatures

Preparation for the major. Required with grades of C or higher: Slavic 1, 2, 3, 4, 5, 6, or equivalent. Students with proficiency in spoken Russian should not enroll in courses lower than Slavic 4. Recommended: Slavic 33, History 4A-B-C. Students transferring from other institutions may be tested by examination. *Note: Students who have completed a more advanced course in a lower-division sequential series will not be permitted to take a course that is lower in the series.*

Upper-division major. Forty upper-division units in Slavic courses are required, including Slavic 101A-B-C, a minimum of 4 units selected from Slavic 106, 108, 109, 145, 163; and a minimum of 4 units selected from Slavic 121, 124, 128. The remaining electives will be selected from upper-division Slavic offerings. Up to 8 units of upper-division electives in Slavic and East European Studies in such areas as Comparative Literature, Political Science, History, Film Studies, Economics, Anthropology, or Music may be accepted in the major by petition. History 126A-B and 135A-B-C; Political Science 128 and 143, Film Studies 138 recommended.

UCSB participates in the University of California Education Abroad Program through which UC students spend a semester in Moscow. Qualified students are strongly encouraged to take advantage of this opportunity; financial assistance is available. Additional information is available in the department office.

Minor—German

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in German and those offered by other departments and applied to the minor.

Preparation for the minor. German 1, 2, 3, 4, 5, 6 or equivalent (0-24 units).

Upper-division minor. Twenty units, including German 101A and B or C (8 units); and 12

upper-division units selected from courses in German culture, linguistics, or literature. (Courses outside the department must be approved by the department before enrolling to ensure that content is relevant.)

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Russian

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Slavic and those offered by other departments and applied to the minor.

Preparation for the minor. Slavic 1, 2, 3, 4, 5, 6 or equivalent (0-30 units). Students with proficiency in spoken Russian should not enroll in courses lower than Slavic 4.

Upper-division minor. Twenty units, including 4 units from Slavic 101A-B-C, 121, 124, 128, and 16 units of upper-division electives selected from courses in Slavic languages, cultures, linguistics, or literature

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet university degree requirements found in the chapter "Graduate Education at UCSB."

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB," including the mandatory Graduate Record Examination (GRE).

Master of Arts—Germanic Languages and Literatures

Admission

In addition to the general requirements of the Graduate Division, applicants must have an undergraduate major in German literature or its equivalent. Candidates may be required to take undergraduate courses to make up deficiencies in preparation before or concurrent with beginning work in the master's program.

Degree Requirements

The department offers the M.A. degree under Plan 1 (with thesis and oral exams) and Plan 2 (by written and oral exam instead of thesis). Thirty-six letter-grade units (4 units per course) of German graduate courses must be completed before the examination; 4 of these units may be taken from another department with the approval of the faculty graduate advisor. The master's degree requires three quarters of residency. For students who wish to continue to the Ph.D. program, a written qualifying exam is required. An oral examination follows the written examination of continuing candidates, testing the student's literary-historical and interpretative skills in the chosen area of concentration.

To satisfy the foreign language requirement for the M.A., the student must complete, with a grade of B or better, one upper-division literature course in a language other than German in which readings are substantially in the foreign language, or take a departmental examination. Courses taken to fulfill a foreign language requirement, or taken in preparation for meeting a foreign language requirement, will not apply toward the department's course requirements for the degree.

One four-unit course in another department may, with the approval of the graduate advisor, be counted toward the degree; no undergraduate courses may be counted toward the M.A. degree. Particular attention is called to our graduate-level courses in computer-aided research, textual analysis, and language instruction.

Doctor of Philosophy—Germanic Languages and Literatures

Admission

Students admitted to the Ph.D. program who have earned an M.A. degree at another institution will be evaluated during the third quarter of their residence to determine whether successful completion of their studies is likely.

Degree Requirements

After satisfactory completion of the M.A. or equivalent, the student will be advised by the graduate advisor each quarter about which courses are necessary for proper preparation for the doctoral qualifying examination.

The Ph.D. language requirement is competency in two languages in addition to English and German. The first foreign language requirement is described in the section on the M.A. degree, above. To satisfy the second foreign language requirement for the Ph.D., the student must complete, with a grade of B or better, one upper-division literature course in a language other than German in which the readings are substantially in the foreign language. The student may substitute for the second foreign language a departmental examination, or may complete course 3 of the regular sequence of a second foreign language with a grade of B or better, or may place into course 4 on the language placement examination. Courses taken to fulfill a foreign language requirement, or in preparation for meeting the foreign language requirement, will not be counted as part of a graduate student's academic course load.

Written examinations, followed by an oral examination during which the student presents detailed plans for dissertation research, test three of the following areas of concentration, chosen in consultation with the graduate advisor:

1. Literature of the Middle Ages, or History of the Language, or German Linguistics and Philology, or Literary Theory;

2. Humanism and Reformation, Baroque and Enlightenment;

3. Storm and Stress, German Classicism;

4. Romanticism and Literary Movements of the Later Nineteenth Century, including Poetic Realism and Naturalism;

5. German Literature of the Twentieth Century.

No more than two areas of concentration may be selected from Areas 3, 4, and 5.

Upon passing the oral qualifying examination, the student will be advanced to candidacy. A dissertation must then be written, and defended in an oral examination.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

German Courses

LOWER DIVISION

1. Elementary German
(4) CHUN

Beginning course in German. Student acquires the basic structure of the language, communicative skills, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple cultural texts. Weekly laboratory assignments support and enhance classroom learning.

1G. Introduction to Reading German (for graduate students)
(4) STAFF

Prerequisite: graduate standing.
May be repeated for credit.

A brief introduction to the essentials of German grammar with emphasis on aspects of structure that are indispensable for reading skills (while deemphasizing those that are not). Reading texts are included from the beginning. (First part of the sequence German 2G and 3G.) (F)

2. Elementary German
(4) CHUN

Prerequisite: German 1 with a grade of C or better.

Continuation of German 1.

2G. Introduction to Reading German (for graduate students)
(4) STAFF

Prerequisites: German 1G; graduate standing.

The course is a continuation of German 1G, using the same approach, with reading texts on a somewhat more complex level. (W)

3. Elementary German
(4) CHUN

Prerequisite: German 2 with a grade of C or better.

Continuation of German 2.

3G. Introduction to Reading German (for graduate students)
(4) STAFF
Prerequisites: German 1G and 2G; graduate standing.
The course is a continuation of German 1G and 2G, using the same approach, with reading texts on a more complex level. (S)

4. Intermediate German
(4) CHUN
Prerequisite: German 3 with a grade of C or better.
Continuation of German 3. Introduction of the last few major points of grammar.

5. Intermediate German
(4) CHUN
Prerequisite: German 4 with a grade of C or better.
Expansion and refinement of linguistic and communicative skills learned in Beginning German. Greater focus on speaking German with fluency and accuracy, reading short authentic texts, and writing coherent, organized essays.

6. Intermediate German
(4) CHUN
Prerequisite: German 5 with a grade of C or better.
Continuation of German 5.

8A-B-C. German Conversation
(2-2-2) STAFF
Prerequisites: German 3 is prerequisite to A; German 4 or 8A is prerequisite to B; German 5 or 8B is prerequisite to C. Discussion, 2 hours.
Conversation course conducted entirely in German.

33. Introduction to German Culture
(4) STAFF
Essential aspects of the present-day cultural scene in Germany, Austria, and Switzerland. Specific issues will change in order to reflect current socio-political problematics. Taught in English.

34. The New Germany Within Modern Europe
(4) HOFFMEISTER
Using its nationalistic history between Bismarck and Hitler as backdrop, this course provides an up-to-date assessment of reunified Germany, of its internal social problems, as well as its relationship with its neighbors. Texts and videos will be discussed.

35. Language and Gender
(4) CHUN
Focus on the language and speech behavior of women and men and the systematic ways in which they use language. Concentration on sociolinguistic evidence and research on German and English to determine differences and explain miscommunication. Taught in English.

36. Educational Multimedia
(4) CHUN
Examination of the educational rationales for the design of multimedia and WWW-based applications for learning, focusing on language learning. Students evaluate existing programs and apply principles of learning with media to the development of there own pilot projects. Taught in English.

37. Current German Issues
(4) GOTTSCHALK
Contrastive studies in news reporting in American and German-language media on world and central-European issues which have attracted wide attention in this and the German-speaking countries. Comparison of styles of analysis, perspectives, emphasis, editorial selection and bias.

38. Love: Stories, Poems, Songs
(4) WEBER
From "Tristan and Iseut" to today, stories about love have undergone dramatic changes. They reflect a society's self-understanding, crisis, institutions, politics, methods of repression.

39. Reading Hunger
(4) WEBER
This class focuses on the relations between food, literature, and philosophy, the connections between eating and reading, eating and writing, eating and thinking. How do eating codes, manners, allowed and forbidden food, etc. leave their imprint on literary and theoretical texts?

41. Dreaming Revolutions: Introduction to Marx, Nietzsche and Freud
(4) WEBER
Introduction to the revolutionary theories of Karl Marx, Friedrich Nietzsche and Sigmund Freud. Explorations of three authors whose writings have profoundly changed our world.

42. Cinderella
(1) LUNDELL
Reading and discussing Cinderella tales from around the world.

45. Friendships, Male and Female
(4) WEBER
What are the differences between friendships and the friendship between a man and a women? Starting from the great friendships of Greek antiquity and its heroes, the class will study literary and philosophical texts about friendship in its difference from love.

46. The City and the Cultural Imagination
(4) DERWIN
How did the shift from rural to city life that occurred with the Industrial Revolution effect the cultural imagination? This and related questions are explored through texts and films by C. Baudelaire, C. Dickens, G. Gissing, F. Lang, R. Rilke, K. Simon, and others. Taught in English.

47. Tramps, Travelers, Vagabonds
(4) DERWIN
The figure of the wanderer has been an object of fascination and endearment in Western culture. At the same time, the wanderer has been seen as a challenge and threat to existing norms. Works by N. Algren, C. Baudelaire, W. Benjamin, J. Eichendorff, J. Renoir, M. Robinson, M. Twain and others.

48. Humor and Irony in Short Stories
(4) GOTTSCHALK
A selection of stories to illustrate that humor and irony can be found in German literature. The positive aspect of humor and irony in defusing tension and bringing about productive changes in people's attitudes, their daily lives, and ways of thinking.

95A. Elementary Yiddish
(4) STAFF
An introduction to the Yiddish language. The goal is to convey the rudiments of the grammar, and to acquire the ability both to read printed Yiddish and to read and write cursive Yiddish.

95B. Intermediate Yiddish
(4) STAFF
Prerequisite: German 95A.
Continuation of German 95A with further exposure to the grammar of Yiddish. More attention given to standard literary figures (Sholem Aleichem, Peretz, etc.) and their easier works.

95C. Advanced Yiddish
(4) STAFF
Prerequisite: German 95B.
Continuation of German 95B with advanced grammatical study. Emphasis on literary texts of some maturity and difficulty as well as contemporary Yiddish in this country, both journalistic and literary.

UPPER DIVISION

German majors please note that no more than 8 units of German courses taught in English may be applied toward the major.

101A. Advanced German
(4) STAFF
Prerequisite: German 6.
A course in advanced structure of German aimed at improving oral and written expression as useful skills. Oral comprehension is also emphasized.

101B. Advanced German
(4) STAFF
Prerequisite: German 101A.
Continuation of German 101A.

101C. Advanced German
(4) STAFF
Prerequisite: German 6.
An intensive reading course using advanced texts, mostly literary, to improve reading skills through a structural approach. This course may be taken simultaneously with or after German 101A or 101B. Taught in German.

103. Phonetics and Phonology
(4) CHUN
Prerequisite: German 6.
Study of the articulatory basis of the sounds of German and a comparison with the English. Focus on improving pronunciation, including attention to intonation. German 103 is strongly recommended before German 120. Taught in German.

104. German Language and Society
(4) CHUN
Prerequisite: German 6.
Varieties of standard and colloquial German as used by different social groups, in various geographical areas, by media and official institutions. Attitudes of German society toward specific language usages: language purism, linguistic prejudices, policies with regard to language barriers. Readings and exercises in analyzing data.

105. The Mystery of Caspar Hauser
(4) WEBER
Prerequisite: German 6.
The mystery of Caspar Hauser's origins and death has not been resolved. But the story of his short life narrates the adventure of a "wild child" who discovers words, dreams and lies – in short, narrates the discovery of language. Taught in German.

107A-B-C. History and Culture of German Speaking Countries
(4-4-4) HOFFMEISTER, KITTLER
Prerequisite: German 6.
A. A study of German cultural history from the great migrations to the age of Baroque.
B. From the Enlightenment to 1933.
C. From 1933 to the present, with focus on the contemporary political, cultural, and socioeconomic situation in the German-speaking countries, with an emphasis on the contrast between East and West Germany. Taught in German.

108A-B. German History of Ideas
(4-4) DERWIN, HOFFMEISTER
Prerequisite: upper-division standing.
German history of ideas, discussing major contributions of German-speaking philosophers, theologians, artists, and poets to European thought. Taught in English.
A. From Middle Ages to French Revolution
B. From romantic idealism to the present

112A. The Language of Business
(4) GOTTSCHALK
Prerequisites: German 101A-B-C.
The course deals with specialized forms of present-day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language. Taught in German.

112C. The Language of the News Media
(4) GOTTSCHALK
Prerequisites: German 101A-B-C.
The course deals with specialized forms of present-day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language. Taught in German.

112D. The German Language: Before and After Reunification
(4) CHUN
Prerequisite: German 6.
Focus on modern, 20th-century German before and after fall of Berlin Wall and subsequent reunification. Focusing specifically on the development of two distinct lexicons during 40 years of separation and the current efforts to deal with those and other linguistic differences. Readings in German.

115A-B-C. Survey of German Literature
(4-4-4) STAFF

Prerequisite: German 6.

A. Survey of the literary movements of the twentieth century.

B. Survey of the literature of classicism and romanticism.

C. Survey of the literary movements of the nineteenth century.

116A Testimonies of the Holocaust
(4) DERWIN

Prerequisites: upper-division standing.

Close reading of post-holocaust German writing. Taught in English.

117. German Judaism in Literature and Philosophy
(4) WEBER

Prerequisite: upper-division standing.

The complex relationship between "being German" (Deutschtum) and "being Jewish" (Judentum) around 1900 is described by some authors as a "symbiosis," by others as an impossibility. Texts by Jewish and non-Jewish authors include Nietzsche, Wagner, Benjamin, Freud, Kafka and others. Taught in English.

118A. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Prerequisite: upper-division standing.

Same course as Interdisciplinary 118A.

Interdisciplinary introduction to the application of multi-media computing on the micro-computer to all aspects of research and teaching. Hands on teaching in lab involving a number of HyperMedia programs.

119. Dare to Think: Questioning the Authorities in Germany
(4) HOFFMEISTER

Prerequisite: upper-division standing.

Studies within a European context, the neglected tradition of active and intellectual resistance to the powers in charge from humanism to the Third Reich; focus on the state, the church, and rigid systems in the arts and sciences.

120. History of the German Language
(4) CHUN, GOTTSCHALK

Prerequisite: German 6.

A history of the language from its Germanic origins to modern times with special reference to the cultural and social forces that shaped the standard literary language.

131. Crime and Punishment
(4) KITTLER

Prerequisite: upper-division standing.

The transgression of the law can mean more than just a breaking of established rules and codes, it can become a challenge to the law itself. This is what the rebel and the great criminal achieves and makes us question law and justice. Taught in English.

132. Gender Discourse: 1789 to the Present
(4) KITTLER

Prerequisite: upper-division standing.

Close readings of legal, philosophical, medical, psychological and literary texts on gender and sexuality over the last two centuries. Authors studied include: de Sade, Kant, Fichte, Kleist, Kafka, Freud, Lacan. Derrida. Taught in English.

133. German Fairytales
(4) STAFF

Prerequisite: German 6.

Not open for credit to students who have completed German 166.

Fairytales from Grimm and other German collections. Social context, narrative technique, recurring types, motifs, and characters. Literary fairytales with its variations and transformations of fairytale material. Lectures and readings in German.

134. Friedrich Nietzsche
(4) RICKELS

Prerequisite: German 6.

A study of Nietzsche in modern German literature. Selected works of Nietzsche and of authors who bear the mark of Nietzsche's influence (including Georg, Hesse, Hofmannsthal, Kafka, and T. Mann) will be examined as to their form and place in the history of ideas. Readings in German.

136. Literature in German Film
(4) GOTTSCHALK, RICKELS

Prerequisite: German 6.

A study of the modern German cinema, and of its place in the culture and literature of the late twentieth century. Both the films and the literary works on which these films are based will be examined in the perspective of contemporary interpretations. Readings in German.

137. Current German Issues
(4) GOTTSCHALK

Prerequisites: two from German 101A-B-C.

May be repeated for credit up to a maximum of 8 units.

The major issues in present-day West German cultural, social, and political life as presented from the German point of view in German language news media, journals, and literature. Taught in German; applicable to German studies concentration.

138. Psy Fi: German Science Fiction
(4) RICKELS

Prerequisite: upper-division standing.

In German culture and thought science fiction provided owner's manual instruction to technologization, modern total war, and psychological warfare. Taught in English.

139. Psychoanalysis and Literature
(4) DERWIN, RICKELS, WEBER

Prerequisite: upper-division standing.

This course has several goals: to introduce major psychoanalytic concepts; to discuss the relationship between representation and human identity; to address the impact of language on the unconscious; to consider psychoanalysis as a historical phenomenon. Taught in English.

140. Champions of Humanism
(4) GOTTSCHALK

Prerequisite: upper-division standing.

Discussion of the works of Thomas Mann, Hermann Hesse, Heinrich Boell, and Stefan Zweig. Readings and lectures in English.

141. Modern Autobiography and Memoir: Texts and Contexts
(4) DERWIN

Prerequisite: upper-division standing.

How do life's events shape autobiographical writing? Conversely, how does the writing about a life actually shape its meaning? These and other questions are explored in the works of modern writers and filmmakers. Taught in English.

142. The Novella: The Nineteenth Century
(4) DERWIN, GOTTSCHALK, HOFFMEISTER

Prerequisite: German 6.

Shorter prose works by authors from romanticism to naturalism. Taught in German.

143. The Superhuman
(4) RICKELS

Prerequisite: upper-division standing.

Our ongoing technologization received two theoretical frames by the end of the nineteenth century: first the theory of evolution, then psychoanalysis. In this double setting, the fantasy of the superhuman has been opening up new prospects for man-and-God.

144. Modern Short Prose
(4) GOTTSCHALK

Prerequisite: German 6.

Short stories, surrealist stories, parables, anecdotes, novellas, literary fairy tales, and experimental texts by authors from the turn of the century to the present, reflecting historical events, political and social changes in all parts of Germany. Taught in German.

150A. Memory and the Study of Culture
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 150A and Comparative Literature 150A. Not open for credit to students who have completed Russian 150A.

Study of the relevance of different models of remembering and forgetting for the development and the transmission of culture especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandel'shtam, and others. Taught in English.

151A. German-Russian Relations
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 151A. Not open for credit to students who have completed Russian 151A.

Study and analysis of German-Russian relations in cultural affairs from Catherine the Great to the present. Taught in English.

151B. Sports and Ideology
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 151B. Not open for credit to students who have completed Russian 151B.

Analysis of the role played by sports in totalitarian societies, such as Nazi Germany and the Soviet Union. The aesthetics of the body and its ideological usurpation. Sports in Nazi art (including film) and in socialist realism. Sports as mass phenomenon. Taught in English.

151C. Literature of Central Europe
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 151C. Not open for credit to students who have completed Russian 151C.

Survey of the literature of central Europe ("Mitteleuropa") during the twentieth century. Readings by Kafka, Schulz, Hashek, Roth, Musil. Readings in English.

153. Studies in Twentieth-Century German Literature
(4) BECHER, KITTLER, WEBER, DERWIN, GOTTSCHALK

Prerequisite: German 6.

May be repeated for credit to a maximum of 20 units, but only 4 units may be applied toward the major..

Intensive study of authors who have left their mark on the literature of this century: Hofmannsthal, Kafka, Rilke, Brecht, T. Bernhard, I. Bachmann, and others. Taught in German.

157A. Postmodernism East and West
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 157A. Not open for credit to students who have completed Russian 157A.

The postmodern condition is often thought to be a phenomenon of late capitalist development. This class examines the relationship between Western postmodernism and its counterpart in the former Eastern Bloc. Lectures and readings in English.

159. The Sublime
(4) SPIEKER

Prerequisite: upper-division standing.

Same course as Slavic 159. Not open for credit to students who have completed Russian 159.

Analysis of key theories of the sublime from Pseudo-Longinus to Lyotard. The rhetorical sublime. The sublime in German idealism (Kant). Freud and the sublime. The sublime and theology. Taught in English.

161. Classicism and Romanticism in German Literature
(4) STAFF

Prerequisite: upper-division standing.

Selected readings in English translation from the classical and romantic German authors of the eighteenth and nineteenth centuries.

163. Contemporary German Literature, 1945-Present
(4) STAFF

Prerequisite: upper-division standing.

Selected readings in English translation from contemporary German literature, including such authors as Grass, Durrenmatt, Frisch, Weiss, Böll, etc.

164A-H. Great Writers in German Language
(4) STAFF
Prerequisite: Upper-division standing.
May be repeated for credit to a maximum of 32 units provided letter designations are different, but only 12 units may be applied toward the major.
One or more major figures will be studied each quarter. Readings and lectures in English.
A. Böll
B. Kleist and Büchner
C. Goethe
D. Thomas Mann
E. Kafka
F. Nietzsche in Literature
G. Freud
H. M. Heidegger

165. Youth Movements in German Literature and Culture
(4) HOFFMEISTER
Prerequisite: upper-division standing.
Investigation of the recurrent phenomenon of youthful rebellion against the older generation; of the underlying causes in society, culture, literature; literature used as a vehicle of social protest; reactions by the establishment. Reading of masterpieces and cultural manifestoes. Storm and stress to romanticism; young Germany to 1990s. Taught in English.

166. Grimms' Fairy Tales
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed German 133.
History. Cultural context. Research. Relation to other fairy tales and collections. Feminist rewrites. Disney versions. Reflection in modern Kunstmärchen. Taught in English.

168. The Faust Tradition
(4) DERWIN, KITTLER, RICKELS
Prerequisite: upper-division standing.
The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann. Readings and lectures in English.

169. Mysticism
(4) STAFF
Prerequisite: upper-division standing.
Analysis of German mystical writing, its roots in ancient Greek texts, revolutionary impact, links with other mystical traditions, influence on secular literature. Texts include Hildegard von Bingen, Meister Eckhart, Mechthild von Magdeburg, Novalis, Rilke, etc. Taught in English.

170. Women Writers
(4) STAFF
Prerequisite: upper-division standing.
Focus on the female voices in German literature, from Romanticism to our days: Rachel Varnhagen, Bettina von Arnim, Droste-Hülshoff, Sabine Spielrein, Ingeborg Bachmann, Nelly Sachs, and others. Lectures and readings in English.

172. Hermann Hesse
(4) GOTTSCHALK
Prerequisite: upper-division standing.
Introduction to Hesse, the man and the artist. Study of the themes and structures of selected works ranging from his beginnings as a writer to his receipt of the Nobel Prize. Taught in English.

172S. Proseminar on Hesse
(4) GOTTSCHALK
Prerequisites: German 172; consent of instructor.
Detailed analysis of Hesse's late prose; comparative studies; papers. Taught in English.

17S. Genius and Madness in Literature
(4) DERWIN, RICKELS, WEBER
Prerequisite: upper-division standing.
The treatment of creativity by German romantic and twentieth century writers. Their theories of madness and of inspiration, their description of unusual states of consciousness, of risk, and suicide. Readings by such authors as E.T.A Hoffmann, Kleist, Mann, and Grass. Lectures and readings in English.

178. Kitsch
(4) GOTTSCHALK
Prerequisite: upper-division standing.
The distinction of genuine art from pretentious, gaudy, shallow trash, and imitations in photography, architecture, design, painting, music, and literature. Multimedia. Lectures in English.

179A. Revolutions: Marx, Nietzsche, Freud
(4) WEBER
Prerequisite: upper-division standing.
Marx, Nietzsche, and Freud have revolutionized our world: Marx, the political and economic landscape; Nietzsche, the realm of philosophy and literature; and Freud, the way we think of our mind, sexualities, wishes and dreams. Explorations of three revolutionary challenges.

180. Mediatechnology
(4) KITTLER
Prerequisite: upper-division standing.
Telegraph, telephone, phonograph, and film are techniques that have engendered new forms of representation, communication, and thinking. The course will study the impact of these transformations in literature and on literature. Taught in English.

180Z. German Cinema
(4) GOTTSCHALK, RICKELS
Prerequisite: upper-division standing.
An analysis of contemporary German film, the representation of metaphors of madness, alienation, isolation, technology, and the filmmaker as social critic. The New Film and its relationship to contemporary literary trends. Taught in English.

182. Vampirism in German Literature and Beyond
(4) RICKELS
Prerequisite: upper-division standing.
From the earliest eye-witness accounts of vampire attacks in ancient Rome to the novels of Stoker and Ewers, the films of Dreyer and Browning, and the interpretations of Voltaire and Freud, bloodsucking has remained, in our culture, our premier and oldest legacy. Taught in English.

183. The Horror Film
(4) RICKELS
Prerequisite: Film Studies 46 or upper-division standing.
Same course as Film Studies 144.
Study of the horror film genre and the reasons for its popularity, including new interest in psychoanalysis and reaction to modern mass society and consumerism. Covers issues of sacrifice, simulated catastrophic loss, and other themes of catharsis.

186. Love and Society
(4) HOFFMEISTER
Prerequisite: upper-division standing.
Analysis of changing relationships between men and women as a product of social conditions reflected in German literature within a European framework. Readings of treatises, poetry, plays, novels from antiquity (Tacitus) to present (Neo-Freudians). Taught in English.

187. Satan in German Literature and Beyond
(4) RICKELS
Prerequisite: upper-division standing.
Explores the rich popular literature dealing with making deals with the devil with focus fixed on the German contributions (for example the Baroque *Trauerspiel,* Luther, versions of *The Faust Legend).*

189A-B. Franco-German Relations
(4) A: HOFFMEISTER, B: KITTLER, WEBER
Prerequisite: upper-division standing.
Study and analysis of Franco-German relations in cultural affairs from the Romans on the Rhine to the present. Taught in English.
A. From the Romans on the Rhine to Napoleon
B. From Napoleon to 1990's

190. Proseminar
(4) STAFF
Prerequisite: German 6.
May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.
Intensive advanced seminar on topic to be determined on a quarterly basis. Taught in German.

196. German Internship and Practicum
(1-S) GOTTSCHALK
Prerequisite: consent of instructor.
Students must have a 3.0 grade-point average. May be repeated for credit to a maximum of 10 units, but only 5 units may be applied toward the major.
Practicum consisting of work for an organization or company where German is spoken and/or written predominantly. Detailed report and evaluations are required.

197. Senior Honors Project
(4-8) STAFF
Prerequisites: open to senior majors only; consent of instructor.
Students must have a 3.0 overall grade-point average and a 3.5 grade-point average in the major. May be repeated twice.
An independent study course (one to three quarters) directed by a faculty member with a carefully chosen topic and bibliography which will result in a documented project or a senior thesis.

198. Readings in German
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in German.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May not be repeated.

199. Independent Studies in German
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in German.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Individual investigations in literary fields.

199RA. Independent Research Assistance in German
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in German; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

207. Renaissance and Reformation
(4) HOFFMEISTER
Studies in the Italian and northern origins of the Renaissance and its transformation through Luther's Reformation; major writers in the vernacular from Ackermann to Dr. Faustus.

210. Seminar in Literary Theory and Criticism
(4) STAFF
Prerequisite: consent of instructor.
Topics in literary theory to be determined on a quarterly basis. Taught in English or German—determined quarterly.

214. The Laws of the Tragic
(4) WEBER
Prerequisite: consent of instructor.
Analysis of aspects of the "tragic" throughout the Greek myths of Medea and Antigone in German literature and some theoretical texts on tragedy (Lessing, Hegel, Nietzsche, etc.) with a special emphasis on the questions of law, sacrifice, and death.

218. Textual Analysis
(4) GOTTSCHALK
Prerequisite: graduate standing.
Interdisciplinary application of the computer and

multimedia to research in the humanities, specifically, the comparative textual analysis of German literary texts in English and other foreign languages. Taught in English.

219. Concordances
(4) GOTTSCHALK

Prerequisite: German 218.

Development of computer-assisted concordances of literary texts using the Oxford and the Berkeley Concordance Programs. Evaluation of different types of concordances and their historical development. Taught in English.

220. History of the German Language
(4) GOTTSCHALK

Prerequisite: German 120.

German in its Indo-European and Germanic setting, from its historical beginnings with emphasis upon the development of a standardized Schriftsprache in the sixteenth century.

220B. Hypertext
(4) GOTTSCHALK

Prerequisite: German 216 and 218.

Parallels in literature and computing: hypertext, a different form of writing and reading. Taught in English.

221A-B-C. Topics in Psychoanalysis
(4-4-4) RICKELS, DERWIN, WEBER

Prerequisite: consent of instructor.

Topics include the intersection of psychoanalysis and feminism, recent French readings of Freud, and psychoanalysis and Marxism. Three-course sequence:

A. Introduction to psychoanalytic theory and its relevance

B. Psychoanalysis and literature

C. Psychoanalysis and film

222. Deconstruction
(4) DERWIN, RICKELS, WEBER

Prerequisite: consent of instructor.

"Deconstruction is one of the most controversial contemporary theoretical approaches to texts." According to Derrida, "deconstruction" exists only as deconstructions, replacing ONE solution with a multiplicity of questions, leading to other questions, and to a radically new ethics of multiplicity.

223. Heidegger and Technology
(4) KITTLER, WEBER

Prerequisite: consent of instructor

The question of being in a technical world as framed by and in Heidegger's thinking.

22S. Cartography
(4) KITTLER

Prerequisite: consent of instructor.

Sovereignty in the nineteenth century no longer means power to take life or let live but power over life. Maps become instruments of power from maps of the Captain in Goethe's *Elective Affinities* to Kafka's *Land Surveyor*.

226A-F. Studies in the Age of Goethe
(4) HOFFMEISTER, RICKELS

May be repeated for a maximum of 20 units.

Studies with special emphasis on one of the following:

A. Sturm und Drang

B. Kleist

C. Hölderlin

D. the Schlegels

E. the romantic novel

F. Lessing

227A-B. Goethe
(4-4) STAFF

A. Reading and interpretation of works representative of one major period or aspect of Goethe's literary development.

B. Individual investigations of specialized topics related to the works of Goethe.

228. Schiller
(4) STAFF

Prerequisite: consent of instructor.

Lectures and discussions of specific topics chosen from Schiller's plays and aesthetic writing.

230A-B-C. The Romantic Movement
(4-4-4) HOFFMEISTER

Oral or written reports and examinations in German 230A, 230B, and 230C.

A. Early German romanticism, with emphasis on theoretical premises and their literary expression.

B. Romantic writing in the period of political nationalism and Restoration.

C. Goethe and European romanticism.

233. Hölderlin
(4) KITTLER, WEBER

Prerequisite: consent of instructor.

The philosopher, poet, and prophet on the borderline of madness: readings include *Hyperion, Empedokles*, poems, odes, and hymns.

238. Cryptology
(4) KITTLER

Prerequisite: consent of instructor.

Sercret writings have a long tradition, but with the invention of technical transmission media, the art of cryptography gains an even greater importance. Ciphers bridge the gap between words and numbers, thus leading to what we call data processing.

239. Realism
(4) DERWIN

Prerequisite: consent of instructor.

Nineteenth- and twentieth-century works of realist fiction and theoretical texts of realism. Topics include the function and status of subjectivity in realism, politics of mimesis, the expressionist debate. Readings of Fontane, Raabe, Mann, Lukacs, Adorno, Brecht and others.

241. The Memoir
(4) DERWIN

Prerequisite: consent of instructor.

Examination of the genre of the memoir tracing interplay between narrative dive to re-member or totalize lived experience and competing forces of repression, fictionalization, and distortion. Texts by Geothe, Freud, A. Frank, Canetti. Proust, Duras, and others.

242. The Frankfurt School
(4) RICKELS, DERWIN, WEBER

Prerequisite: consent of instructor.

Readings of several texts on religion, culture, philosophy, and literature with a special emphasis on the analysis of totalitarianism and antisemitism during the first half of the twentieth century.

243. German Judaism in Literature and Philosophy
(4) WEBER

Prerequisite: consent of instructor.

Analysis of German eighteenth-, nineteenth-, and twentieth-century texts on Judaism. The tension between being Jewish and being German has produced theoretical and literary works and cultures leading to what some have called, correctly or not, the "German-Jewish symbiosis."

244. Ethics and Psychoanalysis
(4) WEBER

Prerequisite: consent of instructor.

What does psychoanalysis—a theory grounded on a praxis—have to do with ethics, that traditionally deals with laws given to a community? What are its political implications? The class will focus on Lacan, Kant, Freud, Heidegger, Derrida, and Foucault. Taught in English.

24S. Introduction to Contemporary Theory
(4) WEBER

Prerequisite: graduate standing.

Focus on texts from contemporary French theory (Derrida, Foucault, Lacan) and from the underlying German philosophical and psychoanalytical tradition, crucial for the understanding of the innovations these authors introduce in today's approaches to literature, philosophy, and cultural studies.

246. Differences: Nomadic Thought, Nomadic Writing
(4) WEBER

Prerequisite: graduate standing.

Nomadic processes are those which wander from point to point, each point connected to all other points in an endless surface network without totalizing origin, organizational hierarchy, or unifying closure. These processes deeply inform contemporary literature, theory, and science.

247. Heidegger on Poetry
(4) WEBER

Prerequisite: graduate standing.

Martin Heidegger is one of this century's greatest and most influential thinkers on language and poetry. His influence has been crucial not only on critics, but also on poets and writers of his time. Reading and texts on Trakl, George, Holderlin, etc. In English.

250A. Memory and the Study of Culture
(4) SPIEKER

Same course as Comparative Literature 250A and Slavic 250A. Not open for credit to students who have completed Russian 250A.

Study of the relevance of different models of remembering and forgetting for the development and the transmission of culture, especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandel'shtam, and others. Taught in English.

257A. Postmodernism East and West
(4) SPIEKER

Prerequisite: graduate standing.

Same course as Slavic 257A. Not open for credit to students who have completed Russian 257A.

The postmodern "condition" is often thought to be a phenomenon of late capitalist development. This class examines the relationship between Western postmodernism and its counterpart in the former Eastern Bloc. Lectures and readings in English.

2S9. The Sublime
(4) SPIEKER

Prerequisite: graduate standing.

Same course as Slavic 259. Not open for credit to students who have completed Russian 259.

Analysis of key theories of the sublime from Pseudo-Longinus to Lyotard. The rhetorical sublime. The sublime in German idealism (Kant). Freud and the sublime. The sublime and theology. Taught in English.

262. Applied Linguistics
(4) CHUN

Prerequisite: consent of instructor.

Rotating topics in Second Language Acquisition and Foreign Language Learning and Teaching, covering theoretical foundations (e.g., role of native language, acquisition versus learning, interlanguage, individual learner differences) and practical applications (e.g., teaching methodologies, proficiency-oriented instruction, teaching of culture).

270. Theories of the Modern
(4) SPIEKER

Prerequisite: graduate standing.

Same course as Art History 296A.

Analysis of theories and critiques of modernism and modernity from Benjamin to Adorno and Derrida, with special focus on the historical avantgarde.

276A Media Events
(4) STAFF

Prerequisites: graduate standing and consent of instructor.

Based on literary, artistic, philosophical, scientific and technical documents this course investigates the impact of new media-technologies such as the printing press, photography, telephony, phonography, cinematography, and electronic data processing on nineteenth- and twentieth-century thought and culture. Taught in English.

414. Translation of General or Specialized Texts into German
(4) STAFF

Prerequisite: German 412.

This course consists of written assignments.

500. Practicum for Teaching Assistants
(2-4) CHUN

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants. Units earned in this course, which is required of all teaching assistants, do not apply toward completion of the M.A. or Ph.D. requirement.

594C. Independent Computer-Assisted Research
(1-4) STAFF

Prerequisites: graduate standing and consent of instructor.

Students who have met certain computer proficiency requirements can work independently on special computer-assisted research projects through this course.

596. Directed Reading and Research
(2-4) STAFF

Prerequisites: graduate standing; consent of instructor, graduate advisor, and department chair. Letter grade only.

Individualized instruction. A written proposal must be approved by department chair, to include a description of the course content and a reading list.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF

Prerequisites: graduate standing; consent of graduate advisor.

No unit credit allowed toward advanced degree(s). Enrollment limited to 12 units per examination.

Instructor should normally be the student's major professor or chair of the doctoral committee. Enrollment must be approved by graduate advisor.

598. Master's Thesis Research and Preparation
(1-6) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 4 units may apply toward masters degree in German.

Instructor should be chair of student's thesis committee.

599. Ph.D. Dissertation Research and Preparation
(2-8) STAFF

Prerequisites: advancement to candidacy; consent of graduate advisor. S/U grading only.

Only for preparation of the doctoral dissertation. Instructor should be the chair of the student's Ph.D. committee.

Hebrew Courses

LOWER DIVISION

1. Elementary Hebrew
(4) SPRECHER

The beginning course in Hebrew. Starting with the study of the alphabet, the student is initiated into the rudiments of the language. Basic grammar, vocabulary, and conversation.

2. Elementary Hebrew
(4) SPRECHER

Prerequisite: Hebrew 1.

Continuation of Hebrew 1.

3. Elementary Hebrew
(4) SPRECHER

Prerequisite: Hebrew 2.

Continuation of Hebrew 2.

4. Intermediate Modern Hebrew
(4) SPRECHER

Prerequisite: Hebrew 3.

Continuation of Hebrew 3 with emphasis in writing, composition, and reading of Hebrew newspapers. Introduction to modern Hebrew literature: prose and poetry.

5. Intermediate Modern Hebrew
(4) SPRECHER

Prerequisite: Hebrew 4.

Continuation of Hebrew 4.

6. Intermediate Modern Hebrew
(4) SPRECHER

Prerequisite: Hebrew 5.

Continuation of Hebrew 5.

UPPER DIVISION

111. The Structure of the Hebrew Bible in Translation
(4) STAFF

Prerequisite: upper-division standing.

Analyses of selected passages both formally and from the point of view of content. Examination of stylistic devices, and the ideas as interpreted in their historical setting. Character analysis of some major figures. Lectures and readings in English.

112. Bible Translations
(4) STAFF

Prerequisite: upper-division standing.

A comparison of selected English translations of a choice of texts from the Hebrew Bible from a stylistic and philological point of view. No knowledge of Hebrew is required.

115A-B-C. Readings in Israeli Hebrew
(4-4-4) SPRECHER

Prerequisite: Hebrew 6.

Advanced readings in Israeli literature and newspapers emphasizing composition, grammar, and conversation.

119. Structural Analysis of Biblical Texts
(4) STAFF

Prerequisite: Hebrew 110 or 111.

May be repeated for credit to a maximum of 8 units.

Translations of selected passages from the Hebrew Bible are analyzed from a structural point of view: poetry, historical narratives, and other prose. Different translations are compared, with the instructor providing information on the original Hebrew.

199. Independent Studies in Hebrew
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Hebrew; and consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. Students may take up to 5 units per quarter; 15 units per year; and up to 30 units total in all 98/99/198/199/199RA courses combined. This course may be repeated for credit to a maximum of 12 units.

Independent investigations in literary fields, and/or languages.

199RA. Independent Research Assistance in Hebrew
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Hebrew; and consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. Students may take up to 5 units per quarter; 15 units per year; and up to 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

Scandinavian Courses

LOWER DIVISION

99. Independent Studies in Scandinavian
(1-5) LUNDELL

Prerequisite: consent of instructor.

Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Individual investigations in fields related to Scandinavian language and culture.

UPPER DIVISION

137. Scandinavian Folklore and Folk Tale
(4) LUNDELL

Prerequisite: upper-division standing.

Study of folk beliefs about creatures of the forest, mountains, and the sea. Witches and magicians. The dead and the devil. Legends of the landscape. Taught in English.

138. Scandinavian Drama
(4) LUNDELL

Prerequisite: upper-division standing.

Drama in Scandinavian literature in translation.

139. Scandinavian Prose
(4) LUNDELL

Prerequisite: upper-division standing.

Prose in Scandinavian literature in translation.

150A-D. Great Scandinavian Writers
(4) LUNDELL

Prerequisite: upper-division standing.

May be repeated to a maximum of 16 units provided the letter designation is different.

One major figure will be studied each quarter. Readings and lectures in English.

A. Isak Dinesen
B. August Strindberg
C. Par Lagerkvist
D. Hans Christian Andersen

160. Northern Folk Tales
(4) LUNDELL

Prerequisite: upper-division standing.

Scandinavian, German, Dutch and English folk tales. Heroes and heroines. Tasks, quests and family dynamics.

190. Special Topics in Scandinavian
(1-4) LUNDELL

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 12 units.

To be taken with the consent of the instructor and the departmental chair by students who have completed the Scandinavian courses regularly offered, or the equivalent, in order to go on with further, more advanced study, according to their needs and interest.

198. Readings in Scandinavian
(1-5) LUNDELL

Prerequisites: upper-division standing; completion of two upper-division courses in Scandinavian; and consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. Students may take up to 5 units per quarter; 15 units per year; and up to 30 units total in all 98/99/198/199/199RA courses combined. This course may be repeated for credit to a maximum of 12 units.

Individual readings in Scandinavian language and/or literature in the student's field of interest.

GRADUATE COURSES

503. Tools of Research in Scandinavian Literature
(2-4) LUNDELL

Prerequisites: graduate standing and consent of instructor.

Auxiliaries to the study of Scandinavian literature including poetics, advanced literary theory, textual criticism, biographical tools, and other related issues.

596. Directed Reading and Research
(2-12) LUNDELL

Prerequisite: graduate standing only.

Letter grade. Minimum of 2 units per quarter. No more than half the units necessary for the master's degree may be taken in Scandinavian 596.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

Semitic Language Courses

UPPER DIVISION

120A-B-C. Historical Semitic Linguistics
(3-3-3) STAFF

Prerequisite: upper-division.

An introduction to the history of the Semitic languages, reconstruction of Proto-Semitic step-by-step regressively by confronting all the Semitic languages.

A. Phonemic system and phonetic development
B. Morphology and syntax
C. Specific problems in individual groups

190. Special Topics in Hebrew
(3-S) STAFF

Prerequisite: Hebrew 115C.

May be repeated for credit to a maximum of 12 units.

To be taken with the consent of the instructor and the departmental chair by students who have completed the Hebrew courses regularly offered, or the equivalent, to go on with further, more advanced study, according to their needs and interest.

199. Independent Studies in Semitic Languages
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Semitic languages.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. Students may take up to 5 units per quarter; 15 units per year; and up to 30 units total in all 98/99/198/199/199RA courses combined. This course may be repeated for credit to a maximum of 12 units.

Independent investigations in literary fields.

GRADUATE COURSE

596. Directed Reading and Research
(2-4) STAFF

Prerequisites: graduate standing.

Letter grade; minimum of 2 units per quarter.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

Slavic Courses

LOWER DIVISION

1. Elementary Russian
(5) STAFF

Not open for credit to students who have completed Russian 1.

Comprehensive introduction to Russian. Focus on developing basic communicative skills (speaking, listening, comprehension, reading, writing) within the framework of contemporary Russian culture. Students acquire a basic grammatical framework for further language study. Audio, visual, and web-based materials included.

2. Elementary Russian
(5) STAFF

Prerequisite: Slavic 1.

Not open for credit to students who have completed Russian 2.

Continuation of Slavic 1.

3. Elementary Russian
(5) STAFF

Prerequisite: Slavic 2.

Not open for credit to students who have completed Russian 3.

Continuation of Slavic 2.

4. Intermediate Russian
(5) STAFF

Prerequisite: Slavic 3.

Not open for credit to students who have completed Russian 4.

Focuses on developing fluency, expanding vocabulary, and acquiring basic reading and writing skills. Comprehensive review of basic Russian grammar; introduction to participles and verbal adverbs. Audio, video, and web-based materials are an integral part of the course.

5. Intermediate Russian
(5) STAFF

Prerequisite: Slavic 4.

Not open for credit to students who have completed Russian 5.

Focuses on developing fluency, expanding vocabulary, and acquiring basic reading and writing skills. Comprehensive review of basic Russian grammar; introduction to participles and verbal adverbs. Audio, video, and web-based materials are an integral part of the course.

6. Intermediate Russian
(5) STAFF

Prerequisite: Slavic 5.

Not open for credit to students who have completed Russian 6.

Focuses on developing fluency, expanding vocabulary, and acquiring basic reading and writing skills. Comprehensive review of basic Russian grammar; introduction to participles and verbal adverbs. Audio, video, and web-based materials are an integral part of the course.

33. Introduction to Russian Culture
(4) STAFF

Not open for credit to students who have completed Russian 33.

Survey of geographical, historical, ethnological, political and literary background of Russia with emphasis on the milestones in each of the above-mentioned fields. Taught in English.

UPPER DIVISION

101A-B-C. Third Year Russian
(4-4-4) STAFF

Prerequisite: Slavic 6.

Not open for credit to students who have completed Russian 101A-B-C.

Continued development of oral and written fluency. Special attention to development of reading skills through a variety of texts related to contemporary Russian culture. Systematic review of advanced grammar. Compositions, translations, and oral presentations required. Periodic screenings of Russian films.

110A-B-C. Advanced Russian Conversation
(2-2-2) STAFF

Prerequisite: Slavic 3.

Not open for credit to students who have completed Russian 110A-B-C.

The advanced conversation series gives advanced students an opportunity to discuss a wide variety of topics. The course is based on active participation and includes individual presentations. Assignments and testing given orally.

115A. Nineteenth-Century Russian Literature I
(4) STAFF

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 115A.

Introduction to Russian literary culture from 1800 to 1850. Readings by Pushkin, Lermontov, Gogol, Dostoevsky, and others. Taught in English.

115B. Nineteenth-Century Russian Literature II
(4) STAFF

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 115B.

Introduction to Russian literary culture from 1850 to 1900. Readings by Dostoevsky, Tolstoy, Goncharov, Turgenev, Leskov, Saltykov-Shchedrin, Chekhov. Taught in English.

116AA-ZZ. The Russian Novel
(4) SPIEKER

Prerequisite: upper-division standing.

May be repeated for credit in combination with Russian 116AA-ZZ to a maximum of 24 units provided letter designations are different.

Intensive study of one major Russian novel per quarter. The discussions are supplemented by selected readings from criticism and philosophy. Taught in English.

A. Tolstoy, *War and Peace*
B. Tolstoy, *Anna Karenina*
C. Dostoevsky, *The Brothers Karamazov*
D. Dostoevsky, *The Idiot*
E. Bely, *Petersburg*
F. Sologub, *The Petty Demon*
G. Bulgakov, *The Master and Margarita*
H. Sholokhov, *The Quiet Don*
I. Pasternak, *Doktor Zhivago*
J. Sokolov, *A School For Fools*

117AA-ZZ. Great Russian Writers
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit in combination with Russian 117AA-ZZ to a maximum of 24 units provided letter designations are different, but only 12 units may be applied toward the major.

Intensive study of one writer. Readings supplemented by selected criticism. Taught in English.

A. Pushkin
B. Gogol
C. Leskov
D. Turgenev
E. Goncharov
F. Chekhov
G. Dostoevsky
H. Tolstoy
I. Nabokov

118. Russian Art
(4) SPIEKER

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 118. Same course as Art History 144D.

Introduction to Russian art and aesthetic theory from the beginning to the present. Readings and lectures in English.

119. Russian Cinema
(4) SPIEKER

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 119.

Introduction to the development of Soviet cinema from the early days to the present. A focal point will be the interaction between politics/ideology and film in Russia. Major directors such as Eisenshtein and Tarkovskii will be treated extensively. Readings and lectures in English.

120. Russian Drama
(4) STAFF

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 120.

Plays from the classic, romantic, and realistic periods; Chekhov's innovative works, as well as drama representative of various trends before and after 1917. Readings and discussion in English.

121. The Russian Short Story
(4) STAFF

Prerequisite: Slavic 6.

May be repeated for credit to a maximum of 8 units.

Analysis and discussion of various forms of the short story by Russian writers.

124. Twentieth-Century Poetry
(4) SPIEKER

Prerequisite: Slavic 6.

Not open for credit to students who have completed Russian 124.

Introduction to twentieth-century Russian poetry. The "Silver Age" and Russian Modernism. Avantegarde poetry. Post-war trends in Russian poetry. Readings by Briusov, Blok, Akhmatova, Mandelshtam, Esenin, Mayakovsky, Pasternak, Brodsky, and others. Readings in Russian.

125A. Twentieth-Century Russian Literature I
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 125A.
Intensive study of particular authors, genres, literary movements, and selected topics in Russian literature from 1900-1954. Taught in English.

125B. Twentieth-Century Russian Literature II
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 125B.
Intensive study of particular authors, genres, literary movements, and selected topics in Russian literature after World War II. Taught in English.

128. Nineteenth-Century Poetry
(4) SPIEKER
Prerequisite: Slavic 6.
Not open for credit to students who have completed Russian 128.
Introduction to Russian versification and nineteenth-century literary culture. Analysis of major nineteenth-century poets: Zhukovsky, Pushkin, Baratynsky, Lermontov, Nekrasov, Tiutchev, Fet. Readings in Russian.

129. Russian Orientalism
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 129.
Comparative analysis of orientalism in Western Europe and Russia. Readings of Chaadaev, Gogol, Skovoroda, Pushkin, Lermontov, Bestuzhev, and others. Taught in English.

136. Eighteenth-Century Culture
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 136.
Introduction to eighteenth-century Russian literature, philosophy, and the visual arts. Taught in English.

137. Realism
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 137.
Nineteenth-century works of realist fiction and theoretical realism texts. Topics include status of the individual in realism, the problem of mimesis, and the ideology of realist art in Russia. Readings of Gogol, Belinsky, Dostoevsky, Tolstoy, Turgenev, Leskov, Chekhov, Lukacs, Adorno.

139. Russian Literature and the Police
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 139.
The police as a symbol of Russia's westernization. Narrative closure in the nineteenth-century novel. The notion of the law in Russian thought. Readings by Gogol, Dostoevsky, Chekhov, Mayakovsky, Prigov, Derrida, Foucault, D.A. Miller. Taught in English.

141. Death and its Representations
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 141.
How do we represent what presupposes our own absence, death? What is the relationship between death, language, and experience? Do texts allow us to "imagine" death? Analysis of these issues through readings of key works of literature and philosophy.

144A. The Avantgarde in Russia
(4) STAFF
Prerequisite: upper-division standing.
Same course as Art History 144A. Not open for credit to students who have completed Russian 144A.
The Russian avantgarde in its European context. The avantgarde and the revolution of 1917. Analysis of key figures and movements within the Russian avantgarde. Taught in English.

144B. Vision
(4) STAFF
Prerequisite: upper-division standing.
Same course as Art History 144B. Not open for credit to students who have completed Russian 144B.
Study of different concepts of visual perception in Russian nineteenth and twentieth century literature and the visual arts. Writers and artists include N. Gogal, V. Nabokov, K. Malevich, V. Shklovsky, and intellectual schools and movements (constructivism, socialist realism, conceptualism). Taught in English.

144C. Contemporary Art in Russia and Eastern Europe
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as Art History144C. Not open for credit to students who have completed Russian 144C.
Study of central intellectual and aesthetic trends in the late Soviet period and in contemporary post-Soviet Russia and Eastern Europe. Analysis of literary texts and the visual arts. Taught in English.

145. Introduction to Slavic Languages and Linguistics
(4) MCCLAIN
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 145.
Introduction to the history and development of the Slavic languages. Topics include dialects, language contact, sociolinguistics, gender issues, and language policy. Taught in English.

150A. Memory and the Study of Culture
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as German 150A and Comparative Literature 150A. Not open for credit to students who have completed Russian 150A.
Study of the relevance of different models of remembering and forgetting for the development and the transmission of culture especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandelshtam, and others. Taught in English.

151. Slavic and East European Folklore
(4) MCCLAIN
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 151.
Introduction to the calendar cycle, rituals, dance, music, and folkcraft of the Slavs and other East European peoples.

151A. German-Russian Relations
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as German 151A. Not open for credit to students who have completed Russian 151A.
Study and analysis of German-Russian relations in cultural affairs from Catherine the Great to the present. Taught in English.

151B. Sports and Ideology
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as German 151B. Not open for credit to students who have completed Russian 151B.
Analysis of the role played by sports in totalitarian societies, such as Nazi Germany and the Soviet Union. The aesthetics of the body and its ideological usurpation. Sports in Nazi art (including film) and in socialist realism. Sports as mass phenomenon. Taught in English.

151C. Literature of Central Europe
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as German 151C. Not open for credit to students who have completed Russian 151C.
Survey of literature of central Europe ("Mitteleuropa") during the twentieth century. Readings by Kafka, Schulz, Hashek, Roth, Musil. Readings in English.

153. Internment Camps
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 153.
The literature of the Stalinist concentration camps begs questions concerning the relationship between history, personal memory, and the representation of the past. Readings by Solzhenitsyn, Shalamov, Ginsburg, and others. Taught in English.

154. Science Fiction in Eastern Europe
(4) MCCLAIN
Prerequisite: upper-division standing.
The genre of science fiction and its development in literature and film in the various cultures of Eastern Europe. Topics include utopia, dystopia, technology, the "mad" scientist. etc. Taught in English.

155. Totalitarianism in Literature and Film
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 155.
Analysis of the representation of the Stalin period in post-Stalinist Russian literature and film. Taught in English.

162. Women in Russian Literature
(4) MCCLAIN
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 162.
A survey of the roles of women in Russian literature. Course analyzes both the presentation of women by male writers and works by women writers. Authors: Durova, Pavlova, Mandelshtam, Chukovskaya, Ginzburg, Akhmatova, Tsvetaeva, and others. Lectures and readings in English.

163. Language and Cultural Identity
(4) MCCLAIN
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 163.
Exploration of the way language is used to help construct cultural identity in Eastern Europe. Topics include the relationship between language and dialect and the use of language and other cultural symbols to identify self and other. Taught in English.

167A. Contemporary Russian Cinema
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 167A.
A detailed survey of Soviet/Russian postwar cinema with particular emphasis on post-Soviet Russian film. Taught in English.

167B. Literature in Russian Film
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 167B.
A study of Russian and Soviet cinema and its relations with literary culture. Both the films and the literary texts on which these films are based will be examined. Taught in English.

167C-D-E. Masters of Soviet Cinema
(4-4-4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 167C-D-E..
Introduction to some of the great directors in Russian cinema. Analysis of films and theoretical writings. Study of key theoretical concepts. Taught in English.
C. Eisenshtein
D. Vertov
E. Tarkovsky

168. Russian Thought and Philosophy
(4) SPIEKER

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 168.

Study of key texts and movements in the development of Russian thought, from the Enlightenment to the revolution: Enlightenment, Mysticism, Schellingianism, Chaadaev, Slavophilism, Hegelianism, the 1860's, Populism, Soloviev, Marxism. Taught in English.

170. Modern Polish Literature
(4) SPIEKER

Prerequisite: upper-division standing.

Not open for credit to students who have completed Russian 170.

A comprehensive overview of modern Polish literature, with special attention on famous authors such as Czeslaw Milosz, Bruno Schulz and Zbigniew Herbert. Taught in English.

180. Ideology and Representation
(4) STAFF

Prerequisite: upper-division standing.

How does the representation of the "enemy" during a conflict influence our attitudes toward that conflict? An examination of the images of the opponent in literature, film and journalism. Special emphasis on Eastern Europe.

182. On the Margins
(4) STAFF

Prerequisite: upper-division standing.

An analysis of the representation of marginalized populations in Europe and the United States. How do the stereotypes in literature, film, and journalism help to create and maintain marginalized status?

194. Group Studies for Advanced Students
(1-4) STAFF

Prerequisite: upper-division standing; consent of instructor and department.

May be repeated for credit in combination with Russian 194 to a maximum of 4 units. Enrollment limited to 12 students or less.

Designed to meet special curricular problems.

197. Senior Thesis in Russian
(4-8) STAFF

Prerequisite: senior standing.

Students must have a 3.0 grade-point average. May be repeated for credit to a maximum of 8 units. Not open for credit to students who have completed Russian 197.

Selected seniors may pursue individual projects with close tutorial supervision of faculty advisors. The reading and a substantial essay to be in Russian.

198. Readings in Russian
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Slavic.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit in combination with Russian 198 to a maximum of 6 units.

Guided reading on a subject not covered in the regularly offered courses.

199. Independent Studies in Russian
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Slavic.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

GRADUATE COURSES

232. Moscow/Petersburg
(4) SPIEKER

Prerequisite: graduate standing.

Not open for credit to students who have completed Russian 232.

Traditionally, Russia's cultural life has concentrated in Moscow and St. Petersburg. This class gives a survey of Russian urban culture and analyzes key texts in the intellectual construction of the two cities. Taught in English.

245. Introduction to Slavic Languages and Linguistics
(4) McCLAIN

Prerequisite: graduate standing.

Introduction to the history and development of the Slavic languages. Topics include dialects, language contact, sociolinguistics, gender issues, and language policy. Taught in English.

250A. Memory and the Study of Culture
(4) SPIEKER

Same course as Comparative Literature 250A and German 250A. Not open for credit to students who have completed Russian 250A.

Study of the relevance of different models of remembering and forgetting for the development and the transmission of culture, especially in European and Russian modernism. Readings by Cicero, Quintilian, Freud, Bakhtin, Derrida, Mandelshtam, and others. Taught in English.

251C. Literature of Central Europe
(4) SPIEKER

Prerequisite: graduate standing.

Not open for credit to students who have completed Russian 251C.

Survey of the literature of central Europe ("Mitteleuropa") during the twentieth century. Readings by Kafka, Schulz, Hashek, Roth, Musil.

255. Totalitarianism in Literature and Film
(4) SPIEKER

Prerequisite: graduate standing.

Not open for credit to students who have completed Russian 255.

Analysis of the representation of the Stalin period in post-Stalinist Russian literature and film. Taught in English.

258. Bakhtin
(4) SPIEKER

Prerequisite: graduate standing.

Not open for credit to students who have completed Russian 258.

Mikhail Bakhtin has recently been canonized as the only Russian thinker worthy of being studied by Western theorists. This class gives an overview of Bakhtin's life and work and investigates his relations with other thinkers, such as Marx and Freud. Lectures and readings in English.

259. The Sublime
(4) SPIEKER

Prerequisite: graduate standing.

Same course as German 259. Not open for credit to students who have completed Russian 259.

Analysis of key theories of the sublime from Pseudo-Longinus to Lyotard. The rhetorical sublime. The sublime in German idealism (Kant). Freud and the sublime. The sublime and theology. Taught in English.

267C-D-E. Masters of Soviet Cinema
(4) SPIEKER

Prerequisite: graduate standing.

Not open for credit to students who have completed Russian 267C-D-E.

Introduction to some of the great directors in Russian cinema. Analysis of films and theoretical writings. Study of key theoretical concepts. One director per quarter. Taught in English.

C. Eisenshtein
D. Vertov
E. Tarkovsky

596. Directed Reading and Research
(2-4) STAFF

Letter grade. Minimum of 2 units per quarter. No more than half the units necessary for the master's degree may be taken in Slavic 596.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

Swedish Courses

LOWER DIVISION

1A-B. Accelerated Elementary Swedish
(6-6) LUNDELL

Accelerated two-quarter course covering the same material as the first-year, Swedish 1, 2, 3 sequence. Audio-visual material included.

40. Swedish Grammar and Composition
(1-4) LUNDELL

May be repeated for credit to a maximum of 12 units.

Recommended preparation: speaking knowledge of Swedish.

For students who are advanced in speaking and writing but need elementary training in grammar and writing.

UPPER DIVISION

110A-B-C. Swedish Language and Culture
(4) STAFF

Recommended preparation: advanced speaking knowledge of Swedish language.

Writing, reading, grammar, composition and traditions emphasized.

A. Fairy tales, and popular culture (songs)
B. Excerpts from Swedish literature
C. Literature, history, geography

120. Readings in Contemporary Prose Texts
(4) LUNDELL

Prerequisites: Swedish 3 and consent of instructor.

Readings selected from fiction and/or non-fiction according to student interest. Grammar. Composition

194. Group Studies
(1-4) LUNDELL

Prerequisite: Swedish 3.

May be repeated for credit but only for a total of 12 units.

Designed to meet special curricular problems.

199. Independent Studies in Swedish
(1-S) LUNDELL

Prerequisites: upper-division standing; completion of two upper-division courses in Swedish; consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit to a maximum of 12 units.

Individual investigations in fields related to Swedish culture.

199RA. Independent Research Assistance in Swedish
(1-S) LUNDELL

Prerequisites: upper-division standing; completion of two upper-division courses in Swedish; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit to a maximum of 12 units.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

501. Apprentice Teaching
(2-4) LUNDELL

Prerequisites: graduate standing; consent of instructor, and employment in this department as teaching assistant in Swedish.

This course consists of supervised teaching practice in Swedish language. These units do not count toward any graduate major.

Foreign Literature and Film Taught in English

Literature courses for which no knowledge of a foreign language is required. See course descriptions above.

German: see 108A-B, 138, 147, 161, 163, 164A-H, 165, 166, 168, 169, 170, 172, 172S, 175, 180Z, 182, 186, 189A-B, 143, 179A, 183

Hebrew: see 111, 119

Scandinavian: see 137, 138, 139, 150-D, 160

Slavic: see 115A, 115B, 116AA-ZZ, 117AA-ZZ, 125A, 125B, 141, 154, 162, 170

Global and International Studies

Global and International Studies Program, Office of the Provost, Humanities and Social Sciences 3042; Telephone (805) 893-7860

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Don L. Gevirtz, Visiting Professor, (international affairs, global economics)

Giles B. Gunn, Ph.D., University of Chicago, Professor (global literature, critical theory)

Mark Juergensmeyer, Ph.D., UC Berkeley, Professor (global conflict, global religion and society)

Gurinder Singh Mann, Ph.D., Columbia, Kundan Kaur Kapany Chair in Global and Sikh Studies (Sikhism, South Asian religion and society, global diasporas)

Affiliated Faculty

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Juan E. Campo, Ph.D. (Religious Studies)

Benjamin J. Cohen, Ph.D. (Political Science)

Eve Darian-Smith, Ph.D. (Anthropology)

Richard D. Hecht, Ph.D. (Religious Studies)

Jonathan Inda, Ph.D. (Chicano Studies)

Mattison Mines, Ph.D. (Anthropology)

(In addition to the regular faculty, the Global & International Studies has invited many visiting lecturers including J. Kirk Boyd, Anne Louise Bardach, Louis Cannon, and Sander Vanocur.)

Global and International Studies (G&IS) sponsors interdisciplinary academic programs in global studies, international studies, and area studies, and provides a coordinating center for programs related to international studies throughout the campus. G&IS administers majors in Global Studies and Islamic and Near Eastern Studies and minors in Global Peace and Security Studies, Jewish Studies, and Women, Culture, and Development Studies. G&IS also initiates and sponsors research activities, public events, universitywide academic projects, and print and electronic publications for the wider academic and Santa Barbara community.

See also: Global Peace and Security, Global Studies, Islamic and Near Eastern Studies (INES), Jewish Studies, and Women, Culture, and Development Studies.

Global Peace and Security

Global and International Studies Program, Office of the Provost, Humanities and Social Sciences 3042; Telephone (805) 893-7860

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Chair: Mark Juergensmeyer

Associate Chair: Marguerite Bouraad-Nash

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The Global Peace and Security (GPS) Program at UC Santa Barbara is an affiliated unit of UCSB's Global and International Studies Program. The GPS Program offers students from any discipline the opportunity to complement their major(s) with a challenging interdisciplinary minor in global security issues. In addition to its instructional program, GPS actively initiates and sponsors interdisciplinary research, colloquia, seminars, conferences, and speakers's series for the campus and community. Most GPS events are open to the public, and most are free of charge.

Minor—Global Peace and Security

All courses to be applied to the minor must be completed on a letter-grade basis.

Preparation for the minor. There are no required courses in preparation for the minor.

Upper-division minor. Twenty-four units, distributed as follows: Twelve units selected from Global Peace and Security 136, 137, 140, 194, 196; Global Studies 101, 102, 103, 104, 111, 121, 122 (same as Sociology 166W), 123 (same as Political Science 186A), and 124 (same as Sociology 138G), and Interdisciplinary 199GP; and 12 units selected from Anthropology 104H, 130A-B (same as Environmental Studies 130A-B), 142, 185 (same as Environmental Studies 185); Economics 114, 180, 181; Engineering 101; Environmental Studies 104 (same as Anthropology 104), 122, 124, 130A-B (same as Anthropology 130A-B), 131, 185 (same as

Anthropology 185); History 105, 106D, 135C, 180A-B-C; Political Science 118, 121, 124, 125, 127, 128, 136, 143, 150A, 176; Religious Studies 131H (same as Sociology 131H), 134, 140B, 140F, 143; Sociology 130, 130LA, 130ME, 134, 134T, 166W.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Certificate in Global Peace and Security

Students whose academic programs may preclude completion of the minor (such as students in the College of Engineering) may instead complete the requirements for a certificate in Global Peace and Security Studies. Information regarding the requirements for the certificate can be obtained from the program office.

Global Peace and Security Courses

UPPER DIVISION

136. Theories of Peace, Conflict and Violence
(4) BOURAAD-NASH
Prerequisite: upper-division standing.
Not open for credit to students who have completed Interdisciplinary 197A.
Fundamental issues relating to global peace and security: focus on "negative peace"—the problem of war and organized violence; peace as the avoidance of war.

137. World Society in Transformation: Building Enduring Peace
(4) BOURAAD-NASH
Prerequisite: upper-division standing.
Not open for credit to students who have completed Interdisciplinary 197B.
Fundamental exploration of issues relating to global peace and security with a focus on "positive peace:" peace as human rights, sustainable development, ecological balance, political participation, and other positive aspects of human security.

140. Theory and Practice of Nonviolence
(4) BOURAAD-NASH
Prerequisite: upper-division standing.
Not open for credit to students who have completed Interdisciplinary 140.
Critical examination of nonviolence as a philosophy of life and as a pragmatic approach to conflict resolution. Philosophical, psychological, cultural, and political aspects. Major theorists of nonviolence, including Gandhi, King, and Sharp. Application to conflict at all levels: interpersonal, intergroup, and international. Case studies.

194. Group Studies for Global Peace and Security
(4) BOURAAD-NASH
Prerequisites: upper-division standing.
May be repeated for credit in combination with Interdisciplinary 194GP to a maximum of 12 units, but only 4 units may be applied toward the major.
Intensive analysis of topics and themes in global peace and security. Topics will vary with instructor and year.

196. Global Peace and Security Seminar
(4) BOURAAD-NASH
Prerequisite: upper-division standing.
May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major. Not open for credit to students who have completed Interdisciplinary 196GP.
Intensive analysis of methods and problems of global peace and security. Topics will vary with the instructor and quarter.

199. Supervised Independent Studies in Global Peace and Security
(1-4) STAFF
Prerequisite: upper-division standing; consent of department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and must have completed at least two courses chosen from the interdisciplinary primary or secondary list of courses selected for the GPS certificate requirements. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Although approval of the GPS chair or associate chair is required, faculty from different departments can supervise the work and assign the final grade. No more than 4 units can be used to fulfill the GPS certificate requirement. May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major. Not open for credit to students who have completed Interdisciplinary 196GP.
Students engage in supervised research on peace and conflict issues. Topics include: violence, problems of war, injustice, poverty, ecological deterioration, and the various dimensions of conflict.

Global Studies

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Chair: Benjamin J. Cohen

Global Studies Faculty Advisory Committee

Ralph Armbruster-Sandoval, Ph.D. (Chicano Studies)

Richard P. Appelbaum, Ph.D. (Global and International Studies, Sociology)

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Gurinder Singh Mann, Ph.D. (Global and International Studies, Religious Studies)

Mattison Mines, Ph.D. (Anthropology)

Global Studies was established as an interdisciplinary program within the Global and International Studies Program in 1998. It provides an undergraduate major that is distinctive in its emphases on the transnational process and interactions that bring the world together across traditional national boundaries. It is one of the first programs in the nation to offer a degree in international studies with

Marguerite Bouraad-Nash

LECTURER, POLITICAL SCIENCE AND GLOBAL PEACE & SECURITY

"I seek to teach students how to think, rather than what to think," said Marguerite Bouraad-Nash, lecturer in the Department of Political Science and the Global Peace and Security Program. Professor Bouraad-Nash encourages her students to express their views, share them with each other, and examine how they deal with disagreements. "In courses about war and peace, theory, and the practice of nonviolence, disagreements are bound to occur," she explains. "What is important is how you deal with them."

"I don't like to think of myself as teaching people what to think, but rather how to think."

Respecting differing opinions is key to establishing a civil and intellectual discourse," Bouraad-Nash believes. "Our students are intellectually gifted and are, indeed, privileged to study at UCSB, one of the finest institutions of higher learning. I want them to feel that much has been given to them and, therefore, much is expected in return in the form of contributing positively to society."

contemporary globalizing trends as the central organizing theme.

The major allows students to focus on global studies with either an emphasis in culture and ideology that relates to the contemporary interactions of cultural traditions and ideologies around the world, or an emphasis in socioeconomics and politics that concentrates on the emergence of global socioeconomic systems and issues relating to world order. In either case, students will take courses designed especially for the global studies major and taught by global studies faculty, and approved courses from twenty-two departments and majors throughout the university. These courses examine trends and interactions that affect the whole world.

Students must also specialize in a particular region of the world. They must choose from lists of courses related to studies of Africa, the Middle East, South/Southeast Asia and the Pacific, East Asia, Europe and Eurasia, Latin America, or North America. Students must also attain spoken and written competence in a modern foreign language. Students are also strongly encouraged to participate in the UC Education Aboard Program.

Although there is no minor offered in global studies, students interested in related minors are encouraged to consider the minors in global peace and security, and in women, culture and development, both offered through the Global and International Studies Program.

The global studies major provides a well-rounded liberal arts degree that will help prepare students for a variety of careers in the international arena. It will also help prepare students for further graduate study in international affairs, international business, peace and world order studies, and area studies.

In addition to sponsoring the major, the Global Studies Program supports lectures, research, and symposia in conjunction with other units administered by the Global and International Studies Program. It offers seminars for graduate students and has a planning committee aimed at creating opportunities for graduate level study of international affairs and global issues.

Undergraduate Program

Bachelor of Arts—Global Studies—Culture and Ideology Emphasis

Preparation for the major. Global Studies 1 and 2; one course (4 units) chosen from Anthropology 2, Economics 1 or 2, Environmental Studies 1 or 3, Geography 5, Political Science 6 or 7, Religious Studies 1, Sociology 1, or Women's Studies 20 or 30; one course (4 units) chosen from Art History 6C-D-E, 6I, 6K, East Asian Cultural Studies 2, History 4C, 8, 17C, 46, or 49; and completion of quarter six (or equivalent) of a modern foreign language.

Upper-division major. Forty upper-division units, distributed as follows (no more than 16 of the 40 units may be from the same department, excluding global studies courses and courses cross-listed with global studies): Two courses (8 units) chosen from Global Studies 101, 102, 103, and 104; four courses (16 units) selected from the following: Anthropology 116, 147, 161, Art History 119A-B, 119D, 136E, 143C-D, Black Studies 152, 161, English 125, 186, 187, 188, 189, 190, Film Studies 163, French 172X, German 157A, Global Studies 111, Linguistics 130, Music 112F, 168B-C-D-E-F, Political Science 119, Religious Studies 102, 106, 113, Spanish 121, Women's Studies 150.

Students must also complete four courses (16 units) selected from one of the following geographic regions:

A. *Africa*: Art History 127A-B; Black Studies 120, 130A-B, 133, 171; French 192X; Music 175C; Portuguese 180.

B. *The Middle East*: Art History 132B, 132E-F-G; Music 175F; Religious Studies 131D, 131G, 140A, 140D.

C. *South Asia, Southeast Asia and the Pacific*: Anthropology 136, 140, 142, 144; Art History 129A; East Asian Cultural Studies 157, 161B; Music 175G, 175J; Religious Studies 160, 161A, 162A, 164A, 169, 185.

D. *East Asia*: Anthropology 134H, 138A, 177; Art History 134D, 134F; Chinese 112A-B, 141, 166A, East Asian Cultural Studies 157, 161B, 180C; Film Studies 120; History 182B; Japanese 112; Korean 113; Music 175E, 175H-I.

E. *North America*: Art History 121C-D-E, 121G; Asian American Studies 122, 128; Black Studies 127, 142, 145; Chicano Studies 143, 146, 180; English 136B-C, 191; History 173S, 175A-B; Music 114, 175B, 175D; Religious Studies 152, 154A; Spanish 109.

F. *Latin America*: Anthropology 134, 135; Art History 123A-B-C; History 157C, 158B; Music 175A; Portuguese 106B-C, 125B, 189; Spanish 120A-B, 127, 136, 138, 169, 177, 178, 180, 194.

G. *Europe and Eurasia*: Art History 144C; English 126D, 150, 184, 185; Film Studies 123, 132, 133, 136, 137, 138; French 106C, 106X, 109C; German 108B, 151C, 163, 180Z; History 128F; Italian 112X, 125X, 142X, 161X, 179X; Portuguese 105C, 125A; Russian 119, 162, 167A, 170; Spanish 115B, 118B, 126, 176; Swedish 120.

Bachelor of Arts—Global Studies—Socioeconomics and Politics Emphasis

Preparation for the major. Same as for the emphasis in culture and ideology (see above).

Upper-division major. Forty upper-division units, distributed as follows (no more than 16 of the 40 units may be from the same department, excluding global studies courses and courses cross-listed with global studies): Two courses (8 units) chosen from Global Studies 121, 122, 123, and 124; four courses (16 units) selected from the following: Anthropology 110, 114, 122, 146, 148A, 172, 173; Economics 114, 180, 181; Environmental Studies 103, 130A-B-C, 131, 132; Geography 180, 186; Global Studies 134, 180A-B; History 105, 130Y, 148; Political Science 109, 118, 121, 124, 147, 171, 172, 175, 186B; Religious Studies 134, 172; Sociology 130, 134R, 153, 166, 185G.

Students must also complete four courses (16 units) selected from one of the following geographic regions:

A. *Africa*: Anthropology 156; Black Studies 100; Geography 157; History 142, 143, 144, 155F; Political Science 146A-B.

B. *The Middle East*: History 145D, 145Q, 146A-B, 146T, 146W; Political Science 122, 150A-B, 150M; Religious Studies 131H, 140B, 140F, 149; Sociology 130ME.

C. *South Asia, Southeast Asia and the Pacific*: Anthropology 142B; East Asian Cultural Studies 189A; Geography 154; Global Studies 140, 141, 142; History 138B, 155F; Political Science 139; Religious Studies 170.

D. *East Asia*: Anthropology 126, 138B; History 182B, 185B, 186D, 186M, 187B-C; Japanese 150; Political Science 129, 135, 136, 138.

E. *North America*: Black Studies 169CR; Chicano Studies 168B, 168G-H; Geography 150; Global Studies 164, 169; History 106D, 159C, 166A-B-C, 167B-C-D, 168F, 171B, 179B; Political Science 127, 129, 134; Sociology 155A.

F. *Latin America*: Anthropology 104H, 141; Chicano Studies 168G-H; History 151B-C, 151W, 153L, 154LA-LB, 156B, 157B, 158B; Political Science 101, 134, 148A-B; Sociology 130LA.

G. *Europe and Eurasia*: Anthropology 132, 152; Economics 112B; Geography 155, 159; History 123A-B-C, 126A-B, 130A-B, 131F, 135B-C; Political Science 128, 129, 140, 141, 142, 143.

A maximum of 8 units of 190-level global studies coursework (Global Studies 190, 195, 196, 197, 198, 199) may be applied to the upper-division major by petition. Other substitutions to the major requirements (for example, applying coursework from one emphasis to the other in the upper-division major) must be made by petition to the chair.

Global Studies Courses

LOWER DIVISION

1. Global History, Culture and Ideology
(4) CHAN, GUNN

A survey of the historical processes that have brought different areas of the world into closer contact. Topics include ideologies of nationalism, democracy, and liberalism; international trade and migrations; technological changes; colonialism; the globalization of culture; and the reactions to them.

2. Global Socioeconomic and Political Processes
(4) APPELBAUM, JUERGENSMEYER

Examination of contemporary social, economic, political, and environmental change in a global context; the emergence of a global economy and new systems of world order; and the debate over "globalization" and whether or not it is desirable.

UPPER DIVISION

101. Global Literatures
(4) GUNN

Prerequisite: upper-division standing.

Examination of how recent world literature has contributed to, interpreted, and evaluated globalizing processes. Some attention paid to the relations between literature and other expressive forms such as film, photography, and journalism.

102. Global Religion
(4) HECHT, JUERGENSMEYER

Prerequisite: upper-division standing.

Examination of the globalization of religious traditions in the modern world. Topics include the polarities between homeland and diaspora, the relationships between transnational religions and nation-states, and how these dynamics change the very nature of religious traditions.

103. Global Ideologies
(4) JUERGENSMEYER

Prerequisite: upper-division standing.

Introduction to the major systems of ideas promoting global unity, their attempted implementation, and their critics. Includes Enlightenment Humanism, secular nationalism, colonialism, Marxism, National Socialism, the UN movement, World Federalism, politicized versions of Christianity and Islam, and an emerging globalism.

104. Global Diasporas and Cultural Change
(4) MANN

Prerequisite: upper-division standing.

Globalization of the world's population through international migrations; the emergence of diasporic cultures and their relationship to the countries of origin; interactions between immigrant/ethnic cultures and the dominant cultures of the host societies; the nature of transnational identities.

111. Human Rights in World Affairs
(4) HECHT, BOYD

Prerequisite: upper-division standing.

Examination of the U.N. Declaration of Human Rights as a universal "sacred text," and the responses to it from Islamic, Buddhist, Hindu, Christian, Jewish, and secular philosophic traditions.

121. Historical World Systems
(4) MINES, SMITH

Prerequisite: upper-division standing.

Same course as Anthropology 121MS.

Eurasian systems of trade pre-1825: the major trade systems, modes of production, cultures of banking, credit and trust, early expressions of identity, ethnicity and knowledge of others, trade's impact in the pre-industrial world: distribution of wealth, knowledge, and power.

122. The Contemporary World System
(4) APPELBAUM

Prerequisite: upper-division standing.

Same course as Sociology 166W.

Seminar addressing various theoretical perspectives and empirical issues and aspects of the contemporary world system, with emphasis on political, economic, cultural, and social processes and relations.

123. Introduction to International Political Economy
(4) COHEN

Prerequisite: Political Science 7.

Same course as Political Science 186A.

Introduction to the politics of international economic relations. Examination of alternative analytical and theoretical perspectives for their value in helping to understand and evaluate the historical development and current operation of the world economy.

124. Global Conflict
(4) JUERGENSMEYER, GEVIRTZ

Prerequisites: upper-division standing.

Same course as Sociology 138G. Not open for credit to students who have completed Global Peace and Security 138 or Interdisciplinary 197C.

Exploration of some of the major points of tension in global society since the end of the Cold War, with emphasis on the rise of religious nationalism and ethnic strife in the Middle East, South and Central Asia, and Russia.

134. Social Analysis of Terrorism
(4) JUERGENSMEYER

Prerequisites: upper-division standing.

Same course as Sociology 134T.

A study of terrorist movements and actions, especially those involving religious militants in the Middle East, South Asia, Europe, and the Americas. An exploration of their social causes and effects, and the relationship between religion and violence.

140. Development and Social Change in South and Central Asia
(4) JUERGENSMEYER

Prerequisites: upper-division standing.

Same course as Sociology 130SA.

An exploration of post-colonial social changes in India, Pakistan, Sri Lanka, and other South and Central Asia societies, with emphases on the rise of ethnic nationalism, the Impact of international economic and communication systems, and indigenous forms of development.

141. Modern Southeast Asia
(4) CHAN

Prerequisite: upper-division standing.

Same course as History 189SE.

Selected aspects of the modern history of Southeast Asia: cultural legacies, colonial rule, World War II, post-war struggles for political independence, regional cooperation and conflict, economic development and its sociopolitical impacts, interethnic tensions and political stability, and environmental problems.

142. Modern South Asia
(4) MANN

Prerequisite: upper-division standing.

Selected aspects of the modern history of South Asia, focusing on India and Pakistan. Topics include: religious traditions, British colonialism, the 1947 "Partition," political change, economic development, population pressures, the "Green Revolution" and its social impacts.

164. Special Topics in American Immigration
(4) CHAN

Prerequisite: Global Studies 1 or History 17A or 17B or 17C or upper-division standing.

Same course as History 164IQ.

A survey of selected aspects of American immigration history in the nineteenth and twentieth centuries. Compares immigration from Europe, Asia, Latin America, and elsewhere within the framework of U.S. immigration policy and changing social, economic, political, and legislative conditions.

169. Major Issues in Asian American History
(4) CHAN

Prerequisites: Asian American Studies 1; upper-division standing.

Same course as History 169SA.

Historical and contemporary issues related to Asian immigration into the United States: immigration exclusion, denial of naturalized citizenship and the franchise, economic and social discrimination, and cultural denigration; efforts by Asian Americans to both resist and adapt to such injustice.

180A-B. Women, Culture, and Development
(4-4) BHAVNANI

Prerequisite: upper-division standing.

Same course as Sociology 156A-B.

Critical examination of the interrelationship between women, culture and development. Topics include colonialism, violence, globalization and the state, health and reproduction, religion and nationalism, sustainable development, biotechnology, representation, and resistance movements.

189. Special Topics in Women, Culture, and Development
(4) BHAVNANI

Prerequisite: upper-division standing.

Special seminar on research topics in women, culture, and development.

190. Emerging Trends in Global Studies
(4) STAFF

Prerequisite: upper-division standing.

Focus on the academic study of globalization in its social, cultural, economic, political, and environmental aspects. Includes research methods in field studies and cross-cultural studies. Students complete a final research paper in global studies.

194. Group Studies
(4) STAFF

Prerequisites: upper-division standing; open to Global Studies majors only.

May be repeated for credit to a maximum of 12 units, but only 8 units may be applied toward the major.

Themes will vary according to instructor.

195. Seminar in Global and International Studies
(4) STAFF

Prerequisites: upper-division standing; open to Global Studies majors only.

May be repeated for credit to a maximum of 12 units, but only 8 units may be applied toward the major.

Topics will vary according to instructor.

196. Field Studies in Global and International Studies
(4) STAFF

Prerequisites: consent of instructor; open to Global Studies majors only.

May be repeated for credit to a maximum of 12 units, but only 8 units may be applied toward the major.

On-site examination of organizations, agencies, or locales in a region of the world relevant to the student's field of study involving the application of methods and techniques of investigation in global and international studies.

197. Special Topics in Global and International Studies
(4) STAFF

Prerequisites: upper-division standing.

May be repeated for credit to a maximum of 12 units, but only 8 units may be applied toward the major.

Topics will vary according to instructor.

198. Directed Readings in Global and International Studies
(1-5) STAFF

Prerequisites: upper-division standing; consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. Proposal for study must be submitted to and approved by the program chair. Global Studies 198 may be repeated for credit to a maximum of 15 units, but only 8 units may be applied toward the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

In-depth directed inquiry into a topic of interest to the student.

199. Independent Studies
(1-5) STAFF

Prerequisites: upper-division standing; consent of program and instructor.

Students must have a grade-point average of 3.0 (minimum) for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Global Studies 199 may be repeated for credit to a maximum of 15 units, but only 8 units may be applied toward the major. Students must be majors in global and international studies or present justification to the program for diverting from this norm.

Independent studies in global and international studies.

GRADUATE COURSES

200. Theory and Methods in Global Studies
(4) STAFF

Prerequisite: graduate standing.

A reading seminar on theoretical approaches to global studies. Includes recent historical, literacy, cultural, social, political, economic, environmental, and technical studies in the field.

501. Teaching Assistant Practicum
(4) STAFF

Prerequisite: appointment as a teaching assistant in Global and International Studies.

No unit credit allowed toward degree.

Analyses of texts and materials, discussion of teaching techniques, conducting discussion sections, formulation of topics and questions for papers and examinations. Designed to meet the needs of the graduate student who serves as a teaching assistant.

502. Teaching Global Studies
(4) STAFF

Prerequisite: graduate standing.

A seminar course on the art and methods of teaching global studies.

History

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Department Chair: John E. Talbott

Faculty

Lawrence Badash, Ph.D., Yale University, Professor (history of science)

Randolph Bergstrom, Ph.D., Columbia University, Associate Professor (American social policy)

Hilary Bernstein, Ph.D., Princeton University, Assistant Professor (European renaissance)

W. Elliot Brownlee, Ph.D., University of Wisconsin, Professor (American economic history)

Sarah Cline, Ph.D., UC Los Angeles, Professor (Mexico, Latin America, Christianity)

Patricia Cline Cohen, Ph.D., UC Berkeley, Professor (women, social history)

Douglas H. Daniels, Ph.D., UC Berkeley, Professor (American and Afro-American history)

Jane S. DeHart, Ph.D., Duke University, Professor (modern U.S., women, public policy)

Harold A. Drake, Ph.D., University of Wisconsin, Professor (Rome)

Francis A. Dutra, Ph.D., New York University, Associate Professor (Brazil, Portugal)

Adrienne L. Edgar, Ph.D., UC Berkeley, Assistant Professor (modern Russia and the Soviet Union, central Asia)

Mark C. Elliott, Ph.D., UC Berkeley, Associate Professor (modern Chinese history)

Sharon Farmer, Ph.D., Harvard University, Associate Professor (medieval Europe)

Joshua A. Fogel, Ph.D., Columbia University, Professor (comparative East Asian history)

Abraham Friesen, Ph.D., Stanford University, Professor (Reformation)

Mary O. Furner, Ph.D., Northwestern University, Professor (19th- and 20th-century U.S. history, history of public policy)

Nancy E. Gallagher, Ph.D., UC Los Angeles, Professor (Middle East)

Mario Garcia, Ph.D., UC San Diego, Professor (Chicano history)

Jonathan A. Glickstein, Ph.D., Yale University, Associate Professor (U.S. intellectual history)

Anita Guerrini, Ph.D., Indiana University, Associate Professor (early modern Europe, history of science)

Carl V. Harris, Ph.D., University of Wisconsin, Associate Professor (American South)

Tsuyoshi Hasegawa, Ph.D., University of Washington, Professor (modern Russia)

R. Stephen Humphreys, Ph.D., University of Michigan, King Abdul Aziz Ibn Saud Professor of Islamic Studies (Islamic studies)

Joan Judge, Ph.D., Columbia University, Assistant Professor (modern China)

Laura Kalman, Ph.D., Yale University, Professor (20th-century U.S. legal and political history)

Carol L. Lansing, Ph.D., University of Michigan, Professor (medieval Europe)

John W. I. Lee, Ph.D., Cornell University, Assistant Professor (ancient Greece)

Albert S. Lindemann, Ph.D., Harvard University, Professor (modern European socialism)

Fredrik Logevall, Ph.D., Yale University, Associate Professor (U.S. foreign relations)

John D. Majewski, Ph.D., UC Los Angeles, Associate Professor (19th-century American history)

Harold Marcuse, Ph.D., University of Michigan, Associate Professor (modern central/eastern European history)

J. Sears McGee, Ph.D., Yale University, Professor (Tudor and Stuart Britain)

S. Cecilia Mendez, Ph.D., State University of New York at Stony Brook, Assistant Professor (Latin American history)

Stephan F. Miescher, Ph.D., Northwestern University, Assistant Professor (African history)

Kenneth J. Mouré, Ph.D., University of Toronto, Associate Professor (European economic history)

Alice M. O'Connor, Ph.D., The Johns Hopkins University, Assistant Professor (20th-century U.S. history of public policy)

Michael A. Osborne, Ph.D., University of Wisconsin, Associate Professor (history of biological sciences)

Ann M. Plane, Ph.D., Brandeis University, Assistant Professor (U.S. colonial history)

Erika D. Rappaport, Ph.D., Rutgers University, Associate Professor (modern Britain)

Luke S. Roberts, Ph.D., Princeton University, Associate Professor (history of Japan)

David P. Rock, Ph.D., Cambridge University, Professor (Latin America and Argentina)

Paul M. Sonnino, Ph.D., UC Los Angeles, Professor (early modern Europe)

Paul Spickard, Ph.D., UC Berkeley, Professor (Asian and Pacific islander, American history, multi-raciality, ethnic theory)

John E. Talbott, Ph.D., Stanford University, Professor (modern Europe, war and society)

Zaragosa Vargas, Ph.D., University of Michigan, Associate Professor (modern U.S., labor, Chicano)

Emeriti Faculty

F. A. Bonadio, Ph.D., Yale University, Professor Emeritus (Civil War and Reconstruction)

Morton Borden, Ph.D., Columbia University, Professor Emeritus (early national U.S.)

Alexander B. Callow, Ph.D., UC Berkeley, Lecturer Emeritus (American urban history)

Chi-yun Chen, Ph.D., Harvard University, Professor Emeritus (ancient China)

Robert O. Collins, Ph.D., Yale University, Professor Emeritus (Africa)

Alexander DeConde, Ph.D., Stanford University, Professor Emeritus (foreign relations)

Dimitrije Djordjevic, Ph.D., University of Beograd, Professor Emeritus (Balkans and Eastern Europe)

Frank J. Frost, Ph.D., UC Los Angeles, Professor Emeritus (Greek history)

Alfred M. Gollin, D. Phil., D. Litt., Oxon., Professor Emeritus (modern Britain, 19th and 20th century)

Otis L. Graham, Jr., Ph.D., Columbia University, Professor Emeritus (recent U.S. history)

Stephen N. Hay, Ph.D., Harvard University, Professor Emeritus (India)

Immanuel C. Y. Hsu, Ph.D., Harvard University, Professor Emeritus (modern China)

Harold C. Kirker, Ph.D., UC Berkeley, Professor Emeritus (U.S. culture)

Leonard M. Marsak, Ph.D., Cornell University, Professor Emeritus (modern European intellectual history)

Roderick W. Nash, Ph.D., University of Wisconsin, Professor Emeritus (American environmental history)

Richard E. Oglesby, Ph.D., Northwestern University, Professor Emeritus (American West and California)

Joachim Remak, Ph.D., Stanford University, Professor Emeritus (Europe since French revolution)

Jeffrey B. Russell, Ph.D., Emory University, Professor Emeritus (medieval Christianity)

Affiliated Faculty

Catherine L. Albanese, Ph.D. (Religious Studies)

Allan Grapard, Ph.D. (East Asian Languages and Cultural Studies)

Richard D. Hecht, Ph.D. (Religious Studies)

Robert Morstein-Marx, Ph.D. (Classics)

A.E. Keir Nash, Ph.D. (Political Science)

Hyung Pai, Ph.D. (East Asian Languages and Cultural Studies)

Xiaojian Zhao, Ph.D. (Asian American Studies)

History is studied to enhance the quality of life for the individual. Without any knowledge of the past, the individual becomes a prisoner of the present—able neither to comprehend the present circumstances and their causes nor to deal intelligently with present problems. As a liberal discipline, history aims to permit students to transcend their own cultural limits and, by the study of other societies in other ages, to open their eyes to the diversity of the human environment. It has often been noted that history is the first truly "interdisciplinary" discipline. This is true because everything, no matter how specialized, has a history, and therefore everything is a proper subject of study for the historian. In this department, for instance, the course offerings range not only from the ancient world to modern times, but also from the history of philosophy and ideas to the history of science and its role in society, from governmental elites to popular culture.

The Department of History offers two undergraduate degree programs: the bachelor of arts in history, and the bachelor of arts in the history of public policy.

The B.A. in the history of public policy, the first to be offered in American higher education, combines comparative studies in history with studies in related academic disciplines. Students are expected to acquire competence in a foreign language, in statistics and computer operations, and in research and writing skills, culminating in the preparation of a senior thesis. An internship in governmental and public affairs is strongly recommended.

The department offers the M.A. and the Ph.D. in history within two parallel curricula. One, traditional in nature, prepares students primarily, though not exclusively, for teaching careers in higher and secondary education. The second, pioneered at UCSB, is a graduate program in public historical studies, which aims at training historians for careers not in teaching, but in the community at large, primarily as researchers and writers.

Although personal enrichment is the prime reason that students choose history as a field of study, the nature of the discipline makes it highly desirable as a training ground for many professional fields. The traditional career for the history major has been in teaching, but the breadth of knowledge acquired by studying history is an advantage to those intending a career in business and government service. The stress on the development of research skills, as well as on the ability to think and write clearly, has proven to be excellent preparation for law school and for a wide variety of research and writing jobs.

Students with a bachelor's degree in history who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

The Department of History designates one of its members each year as principal undergraduate advisor; in addition, certain members of the department are appointed undergraduate advisors, each specializing in one of the two majors. Separate advisors are provided for M.A. and Ph.D. candidates. Publications describing both undergraduate and graduate programs are available from the department.

Prizes and Awards

(1) The annual J. Bruce Anderson Fellowship award is endowed by the parents of Dr. Anderson; recipients must be in the Ph.D. program in history. (2) The A. Russell Buchanan Award is presented annually to the graduating senior majoring in history deemed most outstanding. (3) The Richard Kent Mayberry Prize is awarded annually to a history graduate student who has completed at least two years in the doctoral program.

Phi Alpha Theta

Membership in the Gamma Iota Chapter of Phi Alpha Theta, the national history honorary society, is open to students who have completed at least five courses in history with a grade-point average of 3.4 or better. Graduate students and faculty also belong to the organization. In addition to regular meetings on campus, the society sponsors student papers at regional and national meetings. Further information about the organization is available at the department office.

Undergraduate Program

Bachelor of Arts—History

Preparation for the major. Thirty-two lower-division units, including (1) 12 units of History 4A-B-C; (2) 12 units of History 17A-B-C; (3) 4 lower-division units in Asian, African, Latin American, or Middle Eastern history; (4) 4 additional lower-division units of the student's choice in history.

Upper-division major. Forty units of upper-division work in history, at least 4 units of which must be in proseminar courses (any course with the letter P after its number). Four units of History 194AH-BH-CH may substitute for the proseminar requirement, but additional units earned in 194AH-BH-CH may not be applied to the major.

The proseminar. The particular skills of the historian are the ability to define issues, to gather information pertinent to a solution, and to digest and report that information in a clear and well-conceived argument. These skills, which are summed up by the word "research," are especially cultivated in undergraduate proseminars, in which the entire term is devoted to preparing a paper on a specialized topic of research. Majors are required to take at least one such course during their career here, but students serious about developing their research and writing skills are urged to take more than one. Proseminars and their subjects may be readily identified by the letter P after their course number, and by the course title. Since most faculty offer no more than one proseminar a year and enrollment is restricted, advance planning is essential. A list of proseminars to be offered in the current year is available at the Department of History office. Once students have chosen a field for the proseminar, they should approach the faculty to determine when such a proseminar will be offered, so they may plan their schedules well in advance.

Foreign language. Election to Phi Beta Kappa requires proficiency in one foreign language, normally demonstrated by completion of the fourth quarter or its equivalent. Students contemplating graduate study should consult their prospective graduate schools to determine whether specific languages are required.

Graduation with Distinction in History (The Undergraduate Honors Program)

The Department of History at UCSB traditionally has been committed to excellence in undergraduate education. In addition to the lower-division survey courses in American and European history, the department offers equivalent 5-unit honors courses, History 4AH-BH-CH and History 17AH-BH-CH, for students interested in undertaking additional reading and writing assignments. There are also other courses of this nature available at the upper- and lower-division levels.

Students who have successfully completed at least two such courses, or who have completed the department's lower-division historiography course, History 6 (Historical Reasoning), are eligible to enroll in History 100H (Historical Writing). This is an intermediate-level

Sarah Cline

PROFESSOR, HISTORY

History professor Sarah Cline spent her childhood immersed in Latin American history. Her father was a scholar in the field and sparked his daughter's interest in the history of Mexico and Mexican Indians.

"I'm passionate about the things I study and I like to convey that to my students. I enjoy teaching. It informs my research and vice versa."

"I'm passionate about the things I study and I like to convey that to my students," Cline says. "I enjoy teaching. It informs my research and vice versa," she says. She hopes her students leave her classes with an increased awareness of the important role Latin America plays in world affairs, "and not see it as a problem, as it's commonly portrayed." At the very least, she explains, "I want them to be able to read a newspaper and see stories on Latin America and understand them in a larger context."

In addition to her courses on Mexico and the history of Mexican Indians, Cline teaches undergraduate and graduate courses in Latin American history and the history of religion in Latin America.

departmental seminar in which major works from a variety of historical periods and regions are studied and criticized. Qualified students who have not been able to satisfy the honors prerequisite (transfer students, for instance) may petition the department's honors committee for admission to History 100H.

In their junior year, students who have successfully completed History 100H and who have maintained a grade-point average in the major of at least 3.6 will be invited to join the department's Senior Honors Seminar, History 194AH-BH-CH, in which students pursue research on a topic of particular depth and complexity.

Students admitted into the program will enroll in History 194AH-BH-CH for the three quarters of their senior year. History 194AH-BH-CH may be used to satisfy the proseminar requirement for majors. However, no more than 4 units earned in this seminar may be applied to the 40 upper-division units required of all majors. In the fall quarter, honors candidates will read, write papers, and build a working bibliography for their thesis. The remaining two terms of the seminar will be devoted to independent research, conducted in consultation with the thesis advisor. At the end of spring term, students will submit three copies of the thesis to the department office. Students who have completed the honors sequence are eligible for graduation with Distinction in the Major.

Students who have not completed the honors seminar will not normally be eligible, although under unusual circumstances, supported by evidence of superior research and writing done in other history courses (such as the proseminars), a student may petition the department's honors committee. In order to graduate with Distinction in the Major, a student must complete a paper that is recognized by a history faculty member (normally the honors seminar director) as distinguished. The department honors committee will be responsible for verifying the final list of students nominated for graduation with Distinction in the Major.

Bachelor of Arts—History of Public Policy

Preparation for the major. A total of 32 lower-division units in history, composed of the following: (1) History 7; (2) History 4A-B-C; (3) History 17A-B-C; (4) 4 additional units in history which must be in the history of countries or cultures outside of Europe and the United States.

Required work in cognate disciplines: 16 units (four courses) chosen from among the following, with at least one course in each of three of the disciplines indicated: Economics 1, 2, or 109; Political Science 12; Philosophy 3 or 4; Environmental Studies 11, 12, or 13; Sociology 1 or 2 (these may also satisfy the General Education requirements).

Required work in statistics or computer operations: Computer Science 5AA-ZZ or PSTAT 5A-Z or Sociology 3.

Required work in foreign language: 0-20 units (i.e. completion of course 5) in a foreign language appropriate to the area of historical emphasis chosen in the major.

Upper-division major. Required work in history: 40 upper-division units including 8 units from History 163A-B, 170A-B, 171A-B and 172A-B; 24 units including 12 units in the history of one nation, continent, or period, and 12 units in the history of a contrasting nation, continent, or period (exclusive of courses used to satisfy the 8-unit requirement above), selected with the approval of the departmental advisor for public policy students; 8 units of History 195IA-IB (senior seminar).

Required work in cognate disciplines: 20 units, taken in one of the following related fields (inclusive of lower- and upper-division courses): economics, political science, environmental studies, philosophy, or sociology. Courses should be selected with the approval of the departmental advisor to public policy students. (Courses taken during the lower-division preparation for the major may be counted in satisfaction of this requirement.) *Note: Public policy students must secure the departmental advisor's approval for their program each quarter.*

Graduation with Distinction in History of Public Policy (The Undergraduate Honors Program)

History of public policy majors may also enroll in the Honors Program in History, described above. They will do so by fulfilling the listed requirements as to 1-unit honors courses or History 6 (Introduction to History); History 100H; and grade-point average. When invited to join the department's Senior Honors Seminar (History 194AH-BH-CH), which runs for three quarters in the student's senior year, they will do so with the understanding that History 194AH-BH-CH will substitute for History 195IA-IB, the required 8-unit senior thesis requirement in the history of public policy major.

Minor—History

Students majoring in other disciplines who have an interest in history may gain, albeit less intensively, the benefits described above by completing a minor in history. The minor consists of any 12 units of lower-division history courses and any 20 units of upper-division history courses. Publications suggesting ways to choose courses so as to focus on particular aspects of history (e.g., women, religion, science, ethnicity, East Asia, the United States, Europe, Africa, Middle East) are available from the department.

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in history and those offered by other departments and applied to the minor.

Preparation for the minor. Twelve lower-division units in history.

Upper-division minor. Twenty upper-division units in history. The department strongly recommends that one of the upper-division courses be a proseminar (undergraduate research seminar).

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must fulfill the university degree requirements found in the chapter "Graduate Education at UCSB."

In addition to departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB."

Master of Arts—History

Admission

The M.A. degree in history is looked upon as a valuable stage on the path to the doctorate. Although it is understood that some students may choose not to continue beyond the M.A., and that others may not be permitted to do so, the aim of the program is to provide students with research training leading to the doctoral degree. Consequently, the department does not admit students solely for the purpose of obtaining a master's degree. All applicants are admitted to a single M.A./Ph.D. program.

Applicants to the graduate program in history are expected to show high potential for engaging in advanced historical research and analysis. Applicants must meet general university requirements for admission to graduate standing and must have completed an undergraduate major in history or its equivalent. Applicants may be admitted with deficiencies, but those deficiencies must be made up in the first year and do not count in satisfaction of graduate degree unit or course requirements.

Applicants must submit a suitable sample of historical writing, such as a term paper or equivalent, and three letters of recommendation. These should address the applicant's academic qualifications for graduate work in history. In addition, applicants ordinarily are expected to have a minimum grade-point average of 3.5 in upper-division history courses (or 3.75 in master's courses), and minimum scores on the Graduate Record Examination (GRE) of 85th percentile in verbal and 70th percentile in either quantitative or analytical.

Applications for the fall, winter, and spring quarters must be received by January 15. Applicants requesting Graduate Division and/or history department financial assistance must have their completed application in to the department by December 15.

It should be stressed that admission to the program is competitive, and satisfying these minimum requirements does not, by itself, guarantee admission. At the same time, the decision to admit is based on consideration of the entire file, and promising applicants in unusual circumstances whose records fall below the minimum should not be discouraged from applying.

Applicants must be accepted by a major professor with whom they wish to work. Applicants unsure of how to choose a major professor should inquire by letter or telephone to the graduate program assistant, Department of History, as to how to proceed. No student will be admitted or allowed to continue without a faculty sponsor.

Degree Requirements

The M.A. degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements:

Foreign language. Students must pass a written translation examination in at least one foreign language within one calendar year after taking the M.A. comprehensive examination.

Unit requirements. Students must pass a minimum of 36 units of upper-division and graduate history courses. No course will count for the degree if the grade earned in the class is valued at less than 3.0. At least 24 of these units must be in graduate courses numbered between 200 and 292, with 4 units of History 202 (required of all students who have not had a graduate course in historiography) and at least 16 units in research seminars, which will result in the preparation of an original research paper. Papers produced in these seminars lay the foundation for doctoral work and are taken into account along with the results of the comprehensive examinations in evaluating students for admission to the Ph.D. program. History 596 does not apply to the research seminar unit requirement, but 8 units will apply toward the 36-unit requirement. All research seminars last two quarters. Check with the graduate program assistant for credited seminars.

Comprehensive examinations. The student must pass one three-hour written examination in one of the graduate fields listed below. The department offers reading courses in many of these fields to help students prepare for the examination. History 200 courses are designed to cover large, general fields; History 201 courses cover more specialized fields.

United States*
Colonial Latin America
National Latin America
East Asia (pre-1600)
East Asia (post-1600)
Africa
History of Science
Early Modern Europe (1450-1815)
Modern Europe (1789-)
Medieval Europe
Middle East (600-1700)
Middle East (1700-)
Ancient Mediterranean World
History of Public Policy

*An Afro-American, Chicano, or American-Indian emphasis is acceptable in this field.

Doctor of Philosophy—History

Admission

The M.A. degree in history or a cognate field is normally required for admission into the Ph.D. program. Applicants who do not meet this requirement must complete the M.A. in history before continuing to the Ph.D. The application deadline for those applying with an M.A. degree from another institution is December 15 if applying for financial assistance. Students taking the master's examination at UC Santa Barbara must achieve an average grade of A- or higher. In addition, the candidate must acquire a minimum of three satisfactory recommendations from professors within the department, including at least two from professors who have supervised or reviewed the candidate's graduate seminar research papers and one from a faculty member who will serve as major professor. These letters must be on file by the third week of the quarter following award of the M.A.

The General Fields of History

The Department of History at UCSB offers doctoral study in eleven general fields of history:

United States
Latin America
East Asia
Africa
The Middle East
History of Science
Ancient Mediterranean World
Medieval Europe
Early Modern Europe (1450-1815)
Modern Europe (1789-)
History of Public Policy
*Comparative Gender

*Comparative gender is offered only as a third field, and not as a possible first or second field. Please refer to "Degree Requirements: General Examinations" for further description of field three, the outside field in history.

Students will study, and in due time present themselves for examination, in four examination fields, two of them chosen from one of the above general fields, and the third chosen from a second general field. The fourth examination field will be in an outside academic department or in history (see below, under "General Examinations"). The four professors under whom the students study as they prepare for their examinations constitute their doctoral committee. One of its members is the student's major professor, who presides.

Program Supervision

Once admitted to the Ph.D. level, each student will be systematically advised by his or her major professor, who will submit a review of the student's progress and prospects annually in the spring quarter. The results of the annual review will be individually communicated to the student in writing by the director of graduate studies. If the student's progress is unsatisfactory, the student will be notified that he or she is being placed on a one-year probationary status. If at the end of that year progress is still unsatisfactory, the department chair will recommend to the dean of the Graduate Division that the student be dismissed from graduate study.

Degree Requirements

Unit requirements. Students in the doctoral program must enroll for at least six regular academic quarters (not summer sessions) on the UCSB campus pursuing a program of full-time study (12 units each quarter) and research. Three consecutive quarters of this residency must be completed in regular session before advancement to candidacy. Students must complete 32 units of history research seminars, 16 units of which can be taken from the M.A. requirements. Check with the graduate program assistant for credited seminars. History 596 does not count as a research seminar. Students must take at least one graduate course in each of the four areas presented for examination (research seminars and courses taken while in the M.A. program satisfy this requirement), and a graduate course in historiography (History 202) if such a course has not been taken prior to admission to the doctoral program. Doctoral students in American history must take History 292A-B-C, in addition to the 32 units of research seminars.

Foreign language. The student must pass at least one foreign language examination, a requirement which may be satisfied by passing the foreign language examination for the UC Santa Barbara M.A. in history, or, with the approval of the graduate committee, an examination at another institution. Additional language requirements pertinent to the field of research may be specified by the major professor with the approval of the graduate committee. Preparation and supervision of these additional language examinations are the responsibility of the major professor, who may or may not use the regular departmental foreign language examinations.

Students should plan to satisfy the departmental foreign language requirement as soon as possible, but no later than the end of the second year in the doctoral program. No student will be allowed to take the general examinations for the Ph.D. without having completed the departmental language requirement, as well as any additional language requirements required by the major professor.

General examinations. Upon satisfying the unit and foreign language requirements, students will be eligible to take their general examinations. Candidates are required to present themselves for examination in four fields of study—three within history and the option of taking either a cognate field outside the history department or a fourth history field. Examination in the three history fields will be both written and oral; the examination in the cognate field or fourth history field will be oral only. The four fields are:

1. The major field, taken under the student's major professor. It will be in that professor's special field, or, with the approval of the graduate committee, in a closely related field. The major field ordinarily provides the intellectual basis for the dissertation and the student's later emphasis in teaching and research, and the student is expected to achieve depth and breadth of scholarly sophistication and mastery in this field.

2. The general field is the field within which the student's major field is located (e.g., U.S. history is the general field if the major field is U.S. diplomatic history). The student is expected to show breadth and perspective in this field in order to set his or her specialty within its encompassing framework and to be able to teach survey courses.

3. The outside field in history, chosen from a second of the department's graduate fields (see above). This field may be either specialized (as in 1 above) or general (as in 2), depending on the mutual decision of the student, the major professor, and the supervisor of the outside field. This requirement affords the student, for comparative purposes, a deep encounter with the history of a period or culture distinct from

that studied in Fields 1 and 2 and also enables him or her to offer survey courses in this field.

4A. A cognate field outside the discipline of history is chosen from within another academic department. This field should strengthen the student's grasp of Field 1 and be comparable in depth and richness to Fields 2 and 3.

4B. With the approval of the major professor and the director of graduate studies, students may substitute for the cognate field a fourth history field from among a number of other topics. These topics must be sufficiently distinct from the other three fields as to constitute a separate historical specialty. Examples of such topics are environmental history, women's history, native American history, military history, and religious history.

Doctoral students should select their four fields in consultation with their major professor during their first quarter of study. The three written examinations in history must all be completed within a period of one month from the date of the first examination. Each of these examinations will be of three hours' duration. Within one week of passing the last of these examinations, the student must take an oral examination in all four fields. The minimum time allotted to this examination is two hours, but the time period may be extended as warranted by the four examiners. Before a student can advance to candidacy, a dissertation prospectus must be approved by the dissertation committee.

The doctoral dissertation. The doctoral dissertation must be an original work of historical research in the field of the candidate's specialization. It must be in clear prose, have intellectual depth, and demonstrate a mastery of historical methodology. When the dissertation is approved, the candidate may be asked to appear for an oral examination in the field of the dissertation.

Teaching assistantship. A candidate will be required to qualify for and (subject to the availability of funds) to hold a teaching assistantship or a research assistantship as part of the preparation for the Ph.D. degree.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Graduate Program in Public Historical Studies

The Department of History has established within its graduate program a public history emphasis at the doctoral level and offers that emphasis in a unique joint doctoral program with the Capital Campus program of California State University in Sacramento, which brings together public history faculty of the two universities to form one faculty offering doctoral instruction between the two campuses.

Public Historical Studies trains professional historians to serve as research historians working within the community at large, rather than in academic institutions. Either as persons in various types of private practice, or on the staffs of public agencies—as in city, county, state, and federal governments—public historians will research and write historical studies of problems of concern to particular communities or political jurisdictions; aid them in recapturing and in recording and understanding their histories as communities and as organizations; and serve in a variety of other professional employments, such as giving testimony in court proceedings, preparing family histories, preparing environmental impact statements, conducting surveys of historic properties and other cultural resources, and working in historical agencies.

Students will specialize in (1) the history of policy, (2) community history, or (3) cultural resources management. Courses are also available in such fields as business history, women's history, historical editing, and legal history.

Students already holding an M.A. in public history or its equivalent apply directly to the joint UCSB-CSU Sacramento Ph.D. program or the current UCSB Ph.D. program. Students with a B.A. (or M.A. in another field) apply to the M.A. program at CSU Sacramento.

For further information, request from the Department of History a copy of the public historical studies brochure, which describes curriculum and other aspects of the program in detail.

History Courses

LOWER DIVISION

1AA-ZZ. Freshman Seminar in History
(1) STAFF
Prerequisite: lower-division standing.
May be repeated for credit to a maximum of 3 units provided letter designations are different. Letter grade required for majors
A seminar for lower-division students with an interest in history. Content will vary with instructor.

2A-B-C. World History
(4-4-4) STAFF
Survey of the peoples, cultures, and social, economic, and political systems that have characterized the world's major civilizations in Europe, Asia, Africa, the Americas, and Oceania.
A. Prehistory to 1000 CE
B. 1000 to 1700 CE
C. 1700 CE to present

3AA-ZZ. Special Topics
(1-4) STAFF
Topics will vary per instructor.

4A-B-C. Western Civilization
(4-4-4) STAFF
History 4A-B-C is a general survey course, designed to acquaint the student with major developments that have influenced the course of western civilization since the earliest times. These developments are as likely to be in religion, the arts, and sciences as in the more traditional political field. Weekly discussion sections are an important feature of this course, enabling the student to develop and expand upon material presented during the lecture hour.
A. Prehistory to A.D. 1050
B. 1050 to 1715
C. 1715 to present
(F,W,S)

4AH-4BH-4CH. Western Civilization-Honors
(5-5-5) STAFF
Prerequisite: honors standing.
Lecture will be concurrent with History 4A-B-C, along with a weekly two hour honors seminar.

6. Historical Reasoning
(4) DRAKE
Prerequisites: a lower-division course in history and consent of instructor.
Introduction to the development of the history profession, with special attention to the methods and goals of historical research. To develop criteria for judging the value of historical scholarship. Strongly recommended for students considering the Honors Program in History.

7. Great Issues in the History of Public Policy
(4) BERGSTROM
Broad exploration of great issues in the history of public policy from ancient times to the present, to understand basic ways in which societies make their major decisions, the shared dynamics in the process, and how varied settings affect it.

7H. Great Issues in the History of Public Policy-Honors
(1) BERGSTROM
Prerequisites: concurrent enrollment in History 7 and consent of instructor.
Students will receive 1 unit for the honors seminar (7H) or a total of 5 units for History 7.

8. Introduction to History of Latin America
(4) CLINE, ROCK
The course will deal with major issues in Latin America's historical formation: pre-Hispanic cultures, the Spanish conquest, the role of colonial institutions, the development of trade, eighteenth-century reform, independence, the formation of nations; and identify major issues in current Latin American affairs.

8H. Introduction to History of Latin America-Honors
(1) CLINE, ROCK
Prerequisites: concurrent enrollment in History 8; honors standing; consent of instructor.
Students will receive 1 unit for the honors seminar (8H) for a total of 5 units for History 8.

10. Introduction to Chicano History
(4) GARCIA
Prerequisite: lower-division standing.
Same course as Chicano Studies 10.
The historical heritage of the Chicano from Indian and Spanish origins to the contemporary period. Particular stress will be placed on the interpretation and analysis between key periods in world and U.S. history to the experience of Chicanos.

11A-B. History of America's Racial and Ethnic Minorities
(4) VARGAS
Not open for credit to students who have

completed History 11.

History of America's racial and ethnic minorities focusing on Native American, African American, Chicano, Asian American, and European immigrant men and women. Includes a broad range of historical situations to determine specific meanings in the evolution of a distinct multiracial and ethnic American experience.

A. Age of Conquest to 1900
B. 1900 to the present

13. The Ides of March
(4) DRAKE

Causes and consequences of the most famous date in Roman history, explored through literature, film, and ancient sources. (Offered periodically.)

17A-B-C. The American People
(4-4-4) STAFF

A survey of the leading issues in American life from colonial times to the present. The course focuses on politics, cultural development, social conflict, economic life, foreign policy, and influential ideas. Features discussion sections.

A. Colonial through Jacksonian era
B. Sectional crisis through progressivism
C. World War I to the present
(F,W,S)

17AH-17BH-17CH. The American People-Honors
(5-5-5) STAFF

Prerequisites: honors standing; consent of instructor.

Lecture will be concurrent with History 17A-B-C, along with a weekly two hour honors seminar.

45. Introduction to Islamic and Near Eastern Studies
(4) GALLAGHER

Same course as INEST 45.

Exploration of the ancient, medieval, and modern cultures of the Near and Middle East and North America, and the religion, music, art, language, and daily life of Muslim societies from Africa to Asia.

46. Survey of Middle Eastern History
(4) GALLAGHER

Course themes include rise of Islam, development of Islamic civilization, the western impact, and current struggles and conflicts.

49. Survey of African History
(4) MIESCHER

An introduction to the history of Africa from the earliest times to the present. Course themes include: organization of production, state formation, Africa and the world economy, colonialism, resistance, power and identities in African societies, current struggles and conflicts.

56. Introduction to Mexican History
(4) CLINE

Introduction to the basic issues and themes of Mexican history, from the prehispanic era to the present.

78. The City in American History
(4) STAFF

A chronological and topical survey of the American city from the colonial period to the present.

80. East Asian Civilization
(4) FOGEL

Same course as East Asian Cultural Studies 80.

A basic introduction to the history of East Asia focusing on the emergence and evolution of Chinese civilization and its impact upon the distinctive indigenous cultures of Japan, Korea, and Vietnam.

81. Inner Asian Civilizations
(4) PAI

Not open for credit to students who have completed History 83, or East Asian Cultural Studies 83 or 81.

The history, culture, and society of the nomadic peoples of Inner Asia. Topics include the rise of nomadism, the Silk Road, warfare, trade, and the interaction between Steppe empires and sedentary civilizations of Asia.

82. Korean Culture and Society
(4) PAI

Same course as Korean 82. Not open for credit to students who have completed History 80K or Korean 80K.

Introduction to the various features of traditional Korean civilization and society covering its history (prehistory to the end of Japanese occupation in 1945) and topics in anthropology (kinship, inheritance, customs, religion, rice production, and peasant economy).

84. China and the West
(4) ELLIOTT

A broad introduction to the history of relations between the Middle Kingdom and "the West" from the Silk Road and Jesuit missionaries to American businessmen, covering commercial, cultural, intellectual, and technological exchange.

85. China's Last Emperor
(4) ELLIOTT

Not open for credit to students who have completed History 19.

Introduction, through the life of "Henry" Puyi Aisin-Gioro, the last emperor of the Qing dynasty, to major issues in the twentieth-century redefinition of the Chinese nation, with a geographical focus on Northeast China. Topics include democracy and fascism, individual and state, nationalism and national identity, status of women, education, and the role of intellectuals.

87. Japanese History Through Art and Literature
(4) ROBERTS

Not open for credit to students who have completed History 90.

A basic introduction to the history of Japanese culture from its origins to the present day, with particular emphasis on the evidence of architecture and painting (presented through audiovisual modules). Selected examples of fiction and poetry will also be used.

99. Introduction to Research
(1-4) STAFF

Prerequisites: consent of department and instructor.

Students must have an overall grade-point average of 3.0. May be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research under the guidance of a faculty member. Exceptional students are offered an opportunity to undertake independent or collaborative research or to act as interns for faculty-directed research projects.

UPPER DIVISION

100H. Historical Writing
(4) TALBOTT

Prerequisite: two courses from the following: History 4AH, 4BH, 4CH, 6, 7H, 8H, 17AH, 17BH, and 17CH.

An intermediate-level honors seminar in which students read and critique major primary and secondary works from a variety of periods and regions.

101G. Comparative Histories of Contested Sexualities and Same-Sex Practices
(4) LANSING/MIESCHER

Exploration of same-sex behavior in ancient Greek, pre-modern Oceania, medieval Europe, modern Africa, and North America. Introduction to the theoretical questions in the study of sexuality and how scholars have used these tools.

102AA-ZZ. Special Topics
(1-4) STAFF

Topics will vary per instructor.

105. The Atomic Age
(4) BADASH

Prerequisite: History 4C or 17C or upper-division standing.

The history of military uses of nuclear energy and the attendant problems. Topics included: Manhattan Project, decision to use the bomb, legislation, AEC, arms race, testing, fallout, civil defense, disarmament efforts, foreign programs, espionage.

105P. Proseminar in Atomic Age Problems
(4) BADASH

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: History 105 or 106C; and Writing 109HU.

Seminar, with research paper, on relationship between science and technology and society. Topics, one each course, will include Hiroshima and Nagasaki, Arms Race, arms control, science and social responsibility, politics of science, scientific advice to government, civilian uses of nuclear energy.

106A. The Origins of Western Physical Science, Antiquity to 1600
(4) BADASH

Prerequisite: History 4A or 4B or upper-division standing.

The development of astronomy, physics, chemistry, and the organization of science, traced from Babylonian times through the Greek, Roman, Islamic periods, and the Middle Ages in the West, to the scientific renaissance. Emphasis on the growth of scientific ideas.

106B. The Scientific Revolution, 1600 to 1875
(4) BADASH

Prerequisite: History 4A or 4B or upper-division standing.

The establishment of heliocentric astronomy and mechanical philosophy by Galileo, Newton, and others, the creation of scientific societies and periodicals, the rise of chemical and electrical sciences, the influence of science upon the Enlightenment, physical science survey in eighteenth and nineteenth centuries.

106C. Modern Physical Science 1875 to Present
(4) BADASH

Prerequisite: History 4A or 4B or upper-division standing.

The second Scientific Revolution, including the discoveries of x-rays, radioactivity, the electron, relativity, and quantum theory; the growth of atomic and nuclear physics and of quantum mechanics; aspects of astronomy, chemistry, Nazi science, scholars' migration, and discovery of nuclear fission.

106D. U.S. Science Policy
(4) BADASH

Prerequisite: History 17C or 105 or upper-division standing.

From the time governments first funded scientific projects they had, consciously or not, a science policy. What were the reasons for these expenditures? Topics covered range from the Lewis and Clark Expedition to contemporary medical, environmental, space, and defense research.

107A. History of the Biological Sciences: Antiquity to Circa 1600
(4) OSBORNE

Prerequisite: History 4A or 4B.

The work of Aristotle, Hippocrates, and Galen; bestiaries, herbals, medicines, anatomy, to the time of Vesalius.

107B. History of the Biological Sciences: Circa 1600 to 1800
(4) OSBORNE

Prerequisite: History 4B.

Harvey and the circulation of blood, Descartes on animals, microscopy, natural history, botany, morphology, animism, vitalism, to Buffon on cosmogony and cosmology.

107C. History of the Biological Sciences: Circa 1800 to the Present
(4) OSBORNE

Prerequisite: History 4B or 4C or 17B or 17C or 106A or 106B or upper-division standing.

Same course as Environmental Studies 107C.

The work of Cuvier and Lamarck, natural

theology, geology, Darwin, evolution, natural selection, genetics, heredity, variation, modern synthesis, reductionism, population ecology, molecular biology.

107E. History of Animal Experimentation
(4) GUERRINI

Prerequisite: upper-division standing.

Same course as Environmental Studies 107E.

Period: antiquity to present. Topics include the nature of experiment, its role in various research programs, social and cultural contexts, the moral status of animals, the ethics of animal experimentation, and scientific opposition.

107G. History of Global Environmental Problems
(4) OSBORNE

Prerequisites: Environmental Studies 1, or one course from History 4A-B-C, 106A-B-C, 107A-B-C.

Same course as Environmental Studies 107.

Survey of global environmental problems from antiquity to the present. Topics include demography, agriculture, climate change, disease, and storage of toxic waste.

107GP. Proseminar in the History of Global Environmental Problems
(4) OSBORNE

Prerequisite: History 107G or 106A-B-C or 107A-B-C.

May be repeated for credit to a maximum of 8 units.

Undergraduate research seminar in which students produce and present a research paper on a topic of their choice on the history of environmental problems of global importance.

107P. Proseminar on Darwinism and its Social Implications
(4) OSBORNE

Prerequisites: upper-division standing and consent of instructor.

Evolution, natural selection, religion, teleology, Social Darwinism, using the writings of Charles Darwin, Karl Marx, Herbert Spencer, and William Graham Sumner.

110. Social History of Medicine
(4) OSBORNE, GUERRINI

Prerequisite: upper-division standing.

Course themes include the development of medicine and health care in the United States, women and the medical profession, alternate medical systems, and current crises in medical policy.

110D. Diseases in History
(4) OSBORNE, GUERRINI

Prerequisite: upper-division standing.

A study of the importance of communicable diseases in human history from prehistoric times to the present.

110P. Proseminar on Science and Imperialism
(4) OSBORNE

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 8 units.

Strategies for development in the French and British Empires of the nineteenth and twentieth centuries, primarily in Africa and around the Pacific Rim. Scientific development, "scientific colonialism," cultural imperialism.

110Q. Seminar in Medical History
(4) OSBORNE, GUERRINI

Prerequisite: History 110 (may be taken concurrently).

Topics in Asian, African, European, and American medical systems focusing on their historical evolution in the nineteenth and twentieth centuries.

111A-B. History of Greece
(4-4) STAFF

Prerequisite: History 4A or upper-division standing.

A. From the Bronze Age through 399 B.C.

B. From 399 to 31 B.C.

111P. Proseminar in Ancient History
(4) STAFF

Prerequisite: one course from History 111A-B, 113A-B.

May be repeated for credit to a maximum of 8 units.

Research seminar in ancient history. A research paper will be required.

112F. Women in the Ancient Greek World
(4) STAFF

Prerequisite: History 4A or upper-division standing.

A history of the evolving roles of women in Greek society, from the Bronze Age to Hellenistic and Roman times, as portrayed by literature, archaeology, and the fine arts.

113A-B. Roman History
(4-4) DRAKE

Prerequisite: History 4A or upper-division standing.

A. From Neolithic times to the fall of the Republic.

B. The Roman Empire.

113P. Proseminar in Roman History
(4) DRAKE

Prerequisite: History 113A or 113B.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Students produce a research paper on a topic of their choice in the history of either the Republic or Empire. From time to time, a seminar might be devoted to aspects of a particular topic.

114A-B. History of Christianity
(4-4) FRIESEN

Prerequisites: any two quarters of History 4A-B-C; upper-division students only.

A. Beginning to 800

B. 800 to 1300

114C-D. History of Christianity
(4-4) FRIESEN

Prerequisites: any two quarters of History 4A-B-C.

C. 1300 to 1648

D. 1648 to present

114P. Proseminar in the History of Christianity
(4) FRIESEN

Prerequisites: History 4A and 114A.

May be repeated for credit to a maximum of 8 units

History of Christian spirituality from Augustine (fifth century) to Traherne (seventeenth century).

115. The Fall of Rome and the Birth of Europe: 300 to 1050
(4) LANSING

Prerequisite: History 4A.

The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

115P. Proseminar in Medieval History
(4) LANSING

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Seminar which trains students in the methods of historical research. A research paper will be written on a topic within the general area of medieval European history.

115Q. Special Studies in Medieval European History
(1-4) LANSING

Prerequisite: History 115 or 116.

May be taken more than once.

Study of specified topics in medieval European history. A research paper will be required.

116. The Civilization of the High Middle Ages: 1050 to 1350
(4) LANSING

Prerequisite: History 4B.

European civilization during the high Middle Ages. The struggle between church and state, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

117A. Towns, Trade, and Urban Culture in the Middle Ages
(4) FARMER

Prerequisite: History 4B or upper-division standing.

The social and cultural history of medieval towns from the sixth through the sixteenth century: Roman survivals; dark age "commerce;" transition from "gift" to money economy; social unrest; the emergence of urban classes and urban culture.

117B. Peasants and Lords: The Rural History of the Middle Ages
(4) FARMER

Prerequisite: History 4B or upper-division standing.

Social and cultural history of medieval countryside: transition from slavery to serfdom; formation of knightly class; emergence of the manorial and open field systems; social and demographic crises of the later middle ages; rural culture and religion.

117C. Women, the Family, and Sexuality in the Middle Ages
(4) FARMER

Prerequisite: History 4B or upper-division standing.

Not open for credit to students who have completed History 117. Same course as Women's Studies 117C.

Family structure; perceptions and ideals of intimate and familial relations; status, perceptions, and experiences of women in western Europe circa 400-1400 A.D. Special attention on social, political, and religious contexts.

117D. Feminist Perspectives on Jewish and Christian Traditions
(4) FARMER, HECHT

Prerequisite: History 4B or upper-division standing.

Same course as Interdisciplinary 185HF.

This seminar examines selected "clanic" texts (Biblical, Talmudic, Patristic) dealing with women, gender, and sexuality; as well as historic and contemporary uses, reinterpretations and responses to those texts.

117P. Proseminar on Medieval Social History
(4) FARMER

Prerequisite: History 117A or 117B or 117C.

Undergraduate research seminar on selected topics in medieval social history.

118. Varieties of Utopianism and Social Reform from Joachim of Fiore to Karl Marx
(4) FRIESEN

Prerequisite: History 4B.

A study of the varieties of utopian thought from Joachim of Fiore (1200) to Karl Marx (1848) and the relevance of this thought to social reform.

119. The Crusades and the Near East, 1095-1291
(4) HUMPHREYS

Prerequisite: History 4A and 4B; or upper-division standing.

Survey of the Crusades from their origins to the fall of Acre in 1291; ideology of the Crusading movement; history and institutions of the crusader states in the Near East; Muslim responses, ideological and political, to the Crusader presence.

119Q. Topics in History of the Crusades
(4) HUMPHREYS

Prerequisite: upper-division standing.

Recommended preparation: previous course on Medieval Europe or the Middle East.

Topics on the period of the Crusades. These will vary from year to year: e.g., the idea of holy war and jihad, the development of Mediterranean commerce; cultural contact between Islam and Christendom. Term paper required.

120. Orwell's Century
(4) TALBOTT

Prerequisite: consent of instructor.

The writings of the author of *1984* read in the light of major twentieth-century themes: imperialism, socialism, the Great Depression, the Spanish Civil War, fascism, World War II, totalitarianism, the collapse of the Soviet Union, and the Bosnian War.

121A. Renaissance Italy, 1300-1550
(4) STAFF

Not open for credit to students who have completed History 121D.

The cultural, political, social, and gender history of the Italian city republics and court societies. Examination of how contemporaries viewed their

own society, in an attempt to answer the intriguing question of what was the Italian Renaissance?

121B. Renaissance Europe: 1348-1600
(4) STAFF

Not open for credit to students who have completed History 121E.

The history of Northern Europe from the Black Death through the sixteenth. Topics include: social disorders, warfare, intellectual and religious culture, changes in Northern Europe prompted by spreading Renaissance ideas, explorations of the "New World," and religious dispute.

121P. Proseminar in Renaissance Europe
(4) BERNSTEIN

Prerequisite: History 121A or 121B.

Recommended preparation: Writing 109HU.

A seminar on Renaissance Europe, 1300-1600. Students develop research skills and use them to complete a research topic in Renaissance history.

122A-B. Europe in the Age of the Reformation: 1500-1648
(4-4) FRIESEN

Prerequisite: History 4B.

The political, economic, social, and cultural evolution of Europe, 1500-1648.

122P. Proseminar in Reformation Europe
(4) FRIESEN

Prerequisite: History 122A or 122B.

Seminar on the political, economic, social, and cultural evolution of Europe, 1500-1648. A research paper will be required.

123A-B-C. History of Europe, 1815-Present
(4-4-4) LINDEMANN, MOURÉ, TALBOTT

Prerequisite: History 4C.

A survey of European history from 1815 to the present: industrialization; the impact of war; revolution in politics, culture, science, society; and the rise and fall of overseas empires, fascism, and communism.

123P. Proseminar in the History of Europe, 1815-Present
(4) LINDEMANN, MOURÉ, TALBOTT

Prerequisite: History 123A or 123B or 123C.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Research seminar in the history of Europe from 1815 to the present.

124A. Women, Gender, and Sexuality in Europe, 1750-1914
(4) RAPPAPORT

Prerequisite: History 4C.

Same course as Women's Studies 124A.

The roles of women, gender, and sexuality in eighteenth and nineteenth century Europe. Exploration of the nature of women and revolution: religious, legal, scientific, and popular conceptions of gender and sexuality; industrialization and family life, the rise of organized feminism.

124B. Women, Gender, and Sexuality in Europe, 1914-Present
(4) RAPPAPORT

Prerequisite: History 4C.

Same course as Women's Studies 124B.

The relationship between war, revolution, fascism, socialism, feminism, and consumerism and the history of the family, gender, and sexual identities in the twentieth century.

124Q. Readings in Modern European Women's History
(4) RAPPAPORT

Prerequisite: History 4C.

May be repeated for credit to a maximum of 8 units.

Reading seminar on topics in European women and the history of gender. Term paper required.

124WP. Proseminar in European Women's History
(4) RAPPAPORT

Prerequisite: History 124A or 124B or 4C.

May be repeated for credit to a maximum of 8 units.

Research seminar on topics related to the history of women, gender, and sexuality in modern European history.

126A. History of Eastern Europe Before 1918
(4) STAFF

Prerequisite: History 4B or 4C.

Not open for credit to students who have completed History 124R.

The rise of Nationalism in Danubian Europe 1700-1918; including topics in nationalities and national minorities, nationalism and liberalism, and Danubian Europe from the Enlightenment to World War I.

126B. History of Eastern Europe Since 1918
(4) STAFF

Prerequisite: History 4C.

Not open for credit to students who have completed History 126.

A political, social, and economic history of southeastern Europe—especially of the successor states to the Hapsburg monarchy of Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia—from 1918 to the present.

126P. Proseminar in Eastern European History
(4) STAFF

Prerequisite: History 126A or 126B.

Not open for credit to students who have completed History 124PS. May be repeated for credit to a maximum of 8 units.

Research seminar in the history of Eastern Europe.

126Q. Special Topics in Eastern and Central European History
(4) STAFF

Prerequisite: History 4B or 4C or upper-division standing.

May be repeated for credit to a maximum of 12 units.

Lecture course in special areas of Eastern or Central European history. See department office for course topics.

128F. Twentieth-Century Europe: History and Fiction
(4) MOURÉ

Prerequisite: History 4C.

Examines major political, social, and intellectual change in twentieth-century Europe through the works of contemporary writers.

128P. Proseminar in Twentieth-Century Europe
(4) LINDEMANN, MOURÉ

Prerequisite: History 128A or 128B.

May be repeated for credit to a maximum of 8 units.

Special topics in European history from World War I to present.

128Q. Topics in Twentieth-Century Europe
(4) TALBOTT, LINDEMANN, MOURÉ

Prerequisite: History 128A or 128B or 128C or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Topics in twentieth-century European history. Format varies according to topic.

129A-B-C. Europe in the Seventeenth Century
(4-4-4) SONNINO

Prerequisite: History 4B or upper-division standing.

Economic, social, political, and intellectual history of the seventeenth century:

A. 1610-1648
B. 1648-1685
C. 1685-1715

129D-E-F. Europe in the Eighteenth Century
(4-4-4) SONNINO

Prerequisite: History 4C or upper-division standing.

Economic, social, political, and intellectual history of the eighteenth century.

D. 1715 to 1763
E. 1763 to 1789
F. 1789 to 1815

130A. The Social History of European Industrialization
(4) MOURÉ

Prerequisite: History 4C.

The social history of the Industrial Revolution in Europe, 1750-1914. Surveys impact of industrialization on the organization of work, social organization and behavior, urbanization, and the development of social distinctions by class and gender.

130B. European Economic History: The Twentieth Century
(4) MOURÉ

Prerequisite: History 4C.

The evolution of the European economy from the first World War to the present emphasizing the formation and development of the European Union.

130P. Proseminar in European Economic History
(4) MOURÉ

Prerequisite: History 130A or 130B.

May be repeated for credit up to a maximum of 8 units.

A research seminar for students who have completed one other quarter of History 130, and wish to undertake a research project on some aspect of European economic development in the nineteenth or twentieth century.

130Y. Economy and State in the Twentieth Century
(4) BROWNLEE

Prerequisite: upper-division standing.

Compares the development of national economic and social policy in Europe, the United States, the Soviet Union, and Japan since 1900.

131F. Anti-Semite and Jew in Modern Europe and America, 1870 to Present
(4) LINDEMANN

Prerequisite: History 4C.

A study of modern anti-Semitism, beginning with the appearance of political anti-Semitism in Germany and Austria-Hungary; the Dreyfus Affair; Jewish patriots and revolutionaries; Nazism and the Jews; Zionism; anti-Semitism since WW II.

131P. Proseminar in the History of Anti-Semitism in Modern Europe and America
(4) LINDEMANN

Prerequisite: History 131F.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Research seminar in the history of anti-semitism in Europe and America.

132. War and Society Since 1789
(4) TALBOTT

Prerequisite: History 4C.

Not open for credit to students who have completed History 138.

Topics in war, the state and society since 1789. Origins and consequences of wars, and the political, social, and economic aspects of both land and sea warfare. A seminar, with limited enrollment.

133A. Nineteenth Century Germany
(4) MARCUSE

Prerequisite: History 4C.

Not open for credit to students who have completed History 193A.

Survey of the history of the German states from the French Revolution through the stages of industrialization and national unification to World War I. Focus on the development and specific nature of German society and political culture.

133B. Twentieth Century Germany, Part I
(4) MARCUSE

Prerequisite: History 4C.

Not open for credit to students who have completed History 193B.

Examination of German history from the beginning of the twentieth century to World War II. Topics include Germany's role in the first World War, the German Revolution of 1918-19, the Weimar

Republic, and the National-Socialist state and its aims in World War II and the Holocaust.

133C. Twentieth Century Germany, Part II
(4) MARCUSE

Prerequisite: History 4C.

After examining development during the last years of World War II, this course traces the histories of East and West Germany from 1945 to unification in 1989.

133D. The Holocaust in German History
(4) MARCUSE

Prerequisite: History 4C.

Not open for credit to students who have completed History 193D.

The Nazi campaign of racial purification through eugenics and mass murder can be considered one of the watershed events of Western civilization. This course examines the historical, social, political, and economic factors which combined to result in the Holocaust, as well as some of the consequences of that event for German and world history.

133F. German History in Literature
(4) MARCUSE

Prerequisite: History 4A or 4B or 4C.

An exploration of topics in nineteenth and twentieth century German history through works of literature.

133P. Proseminar in German History
(4) MARCUSE

Prerequisite: History 133A or 133B or 133C or 133D.

May be repeated for credit in combination with History 193P to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Students learn research skills and use them to explore topics in twentieth century German history.

133Q. Readings on the Holocaust
(4) MARCUSE

Prerequisite: History 4C or 133A or 113B or 133C or 133D or 133F.

Exploration of selected topics pertaining to the Holocaust through memoirs, historiography, and works of fiction. The course is structured as a dialog between students and the instructor based on written analyses of the literature.

135A-B-C. History of Russia
(4-4-4) HASEGAWA

Prerequisites: History 4B or 4C or upper-division standing.

A. Russia to 1800. A survey of Russian history from the Kievan and Muscovite periods to the end of the eighteenth century. Emphasis placed on the imperial period after Peter the Great.

B. 1800-1917. A survey of Russian history from the reign of Alexander I to the Russian Revolution.

C. 1917-present. A history of the Soviet Union from the Russian Revolution of 1917 to its collapse, focusing on political and social history.

135P. Proseminar in Modern Russian/ Soviet History
(4) HASEGAWA

Prerequisite: History 135B or 135C.

Research seminar in modern Russian and Soviet history.

135Q. Special Topics in Russian History
(4) HASEGAWA

Prerequisite: History 135A or 135B or 135C; upper-division standing.

May be repeated for credit to a maximum of 8 units.

Readings and discussion on selected topics in Russian history.

135S. Readings in Russian History
(1) HASEGAWA

Prerequisite: concurrent enrollment in History 135A or 135B or 135C.

May be repeated for credit to a maximum of 3 units.

Weekly undergraduate seminar for in-depth discussion of the reading assigned for History 135A, 135B, or 135C.

137A-B. The Origins of Contemporary France
(4) TALBOTT, MOURÉ

Prerequisite: History 4C or upper-division standing.

History 137A not open for credit to students who have completed History 137.

Transformation of a tradition-bound rural society into a leading industrial power

A. 1815 to World War I

B. World War I to present

138B. The Vietnam Wars
(4) LOGEVALL

Prerequisite: History 17C or 138A or 166B or 166C or 171B or upper-division standing.

This course covers the history of wars fought in Vietnam since the 1940s, with particular attention to the long period of American involvement. The events will be considered in their relationship to Vietnamese history, American politics and society, and the concurrent Cold War.

138P. Proseminar in the Vietnam Wars
(4) LOGEVALL

Prerequisite: History 138B or 171B.

Recommended preparation: Writing 109HU.

Research seminar on a topic in the history of the Vietnam Wars.

140A-B. Early Modern Britain
(4-4) MCGEE

Prerequisite: sophomore or junior or senior standing.

A history of England from the late Middle Ages to the eighteenth century.

140AH-BH. Early Modern Britain
(1-1) MCGEE

Prerequisites: concurrent enrollment in History 140A-B and consent of instructor.

A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion.

140C. Eighteenth-Century Britain
(4) GUERRINI

Prerequisite: History 4B or 4C.

British history (including Scotland, Ireland, and Wales) from the Glorious Revolution to the Reform Act (1689-1832). Topics include the Enlightenment, the Industrial Revolution, the growth (and partial loss) of Empire, and the development of British identity.

140IA-IB. The History of Modern Ireland
(4-4) MCGEE

Prerequisite: sophomore or junior or senior standing.

A history of Ireland since 1500.

140IP. Proseminar in the History of Modern Ireland
(4) MCGEE

Prerequisite: History 140IA or 140IB.

Recommended preparation: Writing 109HU.

Proseminar in the history of Ireland from 1500 to the present.

140P. Proseminar in Early Modern British History
(4) MCGEE

Prerequisites: History 140A and 140B.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A writing seminar in which emphasis is placed upon the use of primary sources.

141A. Nineteenth-Century Britain
(4) RAPPAPORT

Prerequisite: History 4C or 140A or 140B or 140C.

The rise of Britain as an industrial, urban, and imperial nation. Topics include the nature of industrialization, urbanization, and class formation, the role of gender and race in cultural society, the arts, and the construction of Victorian identities.

141B. Twentieth-Century Britain
(4) RAPPAPORT

Prerequisite: History 4C or 140A or 140B or 140C or 141A.

Culture, society, and politics in Britain since 1914. Topics include the impact of war on society, the economy and empire; the welfare state and changing roles of women, consumer and youth cultures; the new left and new right.

141P. Proseminar in Modern British History
(4) RAPPAPORT

Prerequisite: History 141A or 141B.

May be repeated for credit to a maximum of 8 units.

Research in modern British social, cultural, economic, and political history.

141Q. Readings in Modern British History
(4) RAPPAPORT

Prerequisite: History 4C.

May be repeated for credit to a maximum of 8 units.

Exploration of selected topics pertaining to modern British history through memoirs, historiography, and works of fiction. The course is structured as a dialog between students and the instructor based on written analyses of the literature.

142. History of North Africa
(4) GALLAGHER

Prerequisite: History 46 or upper-division standing.

Survey of the history of Morocco, Algeria, Tunisia, and Libya in the nineteenth and twentieth centuries. Themes include the imposition of colonial rule, revolutionary struggles, and post-independence development.

143. The Nile Quest
(4) STAFF

Prerequisite: History 49.

An examination of African and Victorian societies during the half century in which English explorers sought the source of the Nile. The greatest geographical puzzle of the nineteenth century, the search opened Africa to European partition, imperialism and modernization.

143P. Proseminar in the Nile Quest
(4) MIESCHER

Prerequisite: History 143.

May be repeated for credit to a maximum of 8 units.

An undergraduate research seminar for students who have taken History 143 and wish to conduct more intensive studies of the Nile Valley.

143Q. Special Topics in African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B or 147C or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Focus on special topics in African history. Format will vary according to topic.

144. Resistance in African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B or upper-division standing.

Exploration of the themes of domination and resistance, struggles within African societies and outside interventions, in nineteenth and twentieth-century Africa. Examination of forms of resistance in a series of case studies and discussion of analytical concepts.

145A. The Islamic World, I: The Formation of Islamic Civilization, 600-1000A.D.
(4) HUMPHREYS

Prerequisite: History 46 or INEST 45 or upper-division standing.

The rise of a world religion and the emergence of a new multi-ethic society under its aegis; the evolution of social and political institutions within the Universal caliphate; the creation of a specifically Islamic culture and intellectual life.

145B. The Islamic World, II: Expansion and Consolidation, 1000-1700
(4) HUMPHREYS

Prerequisite: History 46 or INEST 45 or upper-division standing.

Recommended preparation: History 145A.

The failure of the caliphate and the search for a new political order; Turkish military and political

domination; the structures of urban society; the rebirth of Persian literature; the classical formulations of Islamic religious thought.

145D. War and Diplomacy in the Middle East: 1876-Present
(4) HUMPHREYS

Prerequisite: History 46 or INEST 45 or upper-division standing.

Selected problems in the relations of Middle Eastern states within the region and with external powers. The problems studied will vary from year to year. Sample topics: World War I settlement, Mossadegh era in Iran, Israeli invasion of Lebanon (1982).

145P. Proseminar in the History of Islamic Societies
(4) HUMPHREYS

Prerequisite: History 46 or 145A or 145B or 145D or 146A or 146B.

A weekly seminar on a topic in the history of the Islamic world, from 600 A.D. to modern times. A research paper is required.

145Q. Tradition and Modernity in Islamic Political Thought
(4) HUMPHREYS

Prerequisite: Upper-division standing.

The emergence of an Islamic tradition of political thought in medieval times, and the reshaping of this tradition to meet the demands of modernity. Key problems: the purposes of government, autocracy versus popular participation, the nature of legitimacy.

146A-B. History of the Modern Middle East
(4-4) GALLAGHER

Prerequisite: History 46 or upper-division standing.

Course themes include the western impact, forms of resistance, and political, social, economic, and religious dimensions of current crises in Turkey, Iran, and the Arab world.

A. The nineteenth century

B. The twentieth century

146P. Proseminar in the History of the Modern Middle East
(4) GALLAGHER

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A weekly seminar on a topic in modern Middle East history. A research paper will be required.

146T. History of the Arab-Israeli Conflict
(4) GALLAGHER

Prerequisite: History 46 or upper-division standing.

History of the Arab-Israeli conflict from the mid-nineteenth century to the present. Course themes include evolution of Zionism, Palestine before World War I, the British Mandate, World War II, the Arab-Israeli Wars, rise of Palestinian nationalism, and Israeli and Palestinian societies today.

146PW. Proseminar on Women in Middle Eastern History
(4) GALLAGHER

Prerequisite: History 146A or 146B.

A weekly seminar focusing on women in Middle Eastern history. A research paper will be required.

146W. Women in Middle Eastern History
(4) GALLAGHER

A social history of women in the Middle East from the rise of Islam to the present. the course will investiage women's diverse and rapidly changing political, economical, and social roles in the region emphasizing contemporary feminist and Islamist movements.

147A-B. Modern African History
(4-4) MIESCHER

Prerequisite: History 49 or upper-division standing.

A historical survey of sub-Saharan Africa since 1800. Themes include: pre-colonial states and society, Africa and the world economy, colonialism, labor and migration, gender, missionary activities, constructions of ethnicities and custom, resistance and nationalism, popular culture, post-colonial crisis and struggles.

147G. Gender and Power in Modern African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B or upper-division standing.

Examination of gender, power, and authority among and between men and women in response to socioeconomic transformations in nineteenth and twentieth-century Africa. Themes include interpretations of gender, organization of labor, the missionary project, the state, and colonial rule.

147PP. Proseminar in Modern African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A seminar on a topic in modern African history. A research paper is required.

147Q. Readings on African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B.

May be repeated for credit to a maximum of 8 units. Same course as Women's Studies 147Q.

A discussion and reading seminar on selected topics in African history.

151A-B-C. Latin American History
(4-4) CLINE, ROCK, DUTRA, MENDEZ

Prerequisite: History 8 or upper-division standing.

A. A general survey of the social, economic, institutional, and intellectual history of colonial Spanish America (1492-1800), with comparisons to colonial Brazil.

B. Nineteenth-century Latin America. Topics include: the independence movements, the consolidation of the new states, and the rise of export-oriented economies.

C. Twentieth-century Latin America: the export economies, industrialization, the rise of U. S. hegemony; populism and military dictatorship in the postwar period; the Mexican and Cuban revolution; Vargas, Peron, Cardenas, Castro, and Allende.

151CU. History of Cuba
(4) CLINE

Prerequisite: History 8 or upper-division standing.

A survey of Cuban history from Columbas to Castro.

151FQ. History and Film in Latin America
(4) MENDEZ

Prerequisite: History 8.

A weekly seminar discussing films relevant to different periods and topics. The history of Latin America combined with selected readings. Written assignments required.

151P. Proseminar in Latin American History
(4) ROCK, MENDEZ

Prerequisite: History 8 or upper-division standing.

Recommended preparation: Writing 109HU.

A weekly seminar in the history of Latin America. A research paper will be required.

151Q. Readings in Latin America History
(4) MENDEZ

Prerequisite: History 8.

A weekly reading seminar on special topics in the history of Latin America. Depending on the topic, it may include primary sources and works of fiction. Written assignments required.

151W. Women in Latin American History
(4) CLINE

Prerequisite: History 8 or upper-division standing.

A survey of the historical role of women in Latin America from the prehispanic period to the present.

151WP. Proseminar in the History of Latin American Women
(4) CLINE

Prerequisite: History 8 or upper-division standing.

A proseminar dealing with major issues in the history of women in Latin America, colonial era to the present.

152. Comparative Slavery in the Americas
(4) CLINE

Prerequisite: History 8 or upper-division standing.

Comparative examination of slavery and other forced labor in Spanish, Portuguese, French, and English America from the sixteenth century through abolition in the nineteenth.

153. Comparative Seaborne Empires: 1415 to 1825
(4) DUTRA

Prerequisite: a lower-division course in history or upper-division standing.

Analysis of the similarities and differences between the overseas activities of Portugal, Spain, France, England, and the United Provinces of the Netherlands.

153L. History of Argentina from Spanish Settlement to the Present Day
(4) ROCK

Prerequisite: History 8 or upper-division standing.

A case study in economic underdevelopment and political instability.

153P. Special Studies in the History of Overseas Expansion: 1415-1825
(4) DUTRA

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A weekly seminar on overseas expansion (Portugal, Spain, England, France, and the Netherlands), 1415-1825. A research paper will be required.

154LA. Andean History: Prehispanic and Colonial Periods
(4) MENDEZ

Prerequisite: History 8.

Early precolumbian states; the Inca empire; the Spanish conquest of the Inca; the formation of a colonial Andean society; movements toward independence to the end of the colonial period.

154LB. Andean History: The National Period
(4) MENDEZ

Prerequisite: History 8.

The birth of the modern Andean republics; the shaping of national identity; the problem of "race"; Indigensmo; political movements and revolutions from the early nineteenth century to the present.

154Q. Special Topics in Andean History
(4) MENDEZ

Prerequisite: History 8 or 154B or 154LA.

A weekly seminar on special topics relevant to Andean history from the pre-Columbia period to the present.

155A-B. History of Portugal
(4-4) DUTRA

Prerequisite: a lower-division course in history or upper-division standing.

A. A general survey of Portugal from its origins to 1580 with an emphasis on social, economic, and cultural history.

B. Modern Portugal, 1580 to the present.

155E-F. Portugal Overseas
(4-4) DUTRA

Prerequisite: a lower-division course in history or upper-division standing.

Not open for credit to students who have completed History 154A-B.

E. A comparative analysis of Portuguese activity in Africa, Asia, and America, 1415 to 1825.

F. The Portuguese in Africa and Asia, 1826 to the present.

155P. Proseminar in the History of Portugal and Portuguese Expansion
(4) DUTRA

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A weekly seminar on the history of Portugal including topics on its origins to the present and

Portuguese expansion in Africa, Asia, and America. A research paper will be required.

156A. History of Mexico
(4) CLINE
Prerequisite: History 8 or upper-division standing.
Socioeconomic history of colonial Mexico with special attention on the indigenous peoples.

156B. History of Mexico
(4) CLINE
Prerequisite: History 8 or 156A.
Late colonial period, independence, early Republic, the Liberal Reform, French Intervention, and Restored Republic to 1876.

156C. History of Mexico
(4) CLINE
Prerequisite: History 8 or 156A.
From the Porfiriato and Mexican Revolution to the 1990's.

156AH-BH-CH. History of Mexico–Honors
(1-1-1) CLINE
Prerequisites: upper-division standing; honors standing.
Honors seminar for History 156A-B-C.

156I. Indians of Colonial Mexico
(4) CLINE
Prerequisites: History 8 or upper-division standing.
Not open for credit to students who have completed History 150I.
History of Colonial Nahuas, particularly focusing on indigenous sources in translation.

156IP. Proseminar on the Indians of Colonial Mexico
(4) CLINE
Prerequisite: History 8 or 156I.
Recommended preparation: Writing 109HU.
Undergraduate research seminar on the history of Indians in Colonial Mexico.

156P. Proseminar in Mexican History
(4) CLINE
Prerequisite: History 156A or 156B.
May be repeated for credit to a maximum of 8 units.
Recommended preparation: Writing 109HU.
Undergraduate research seminar on topics in Mexican social and economic history.

156R. The Mexican Revolution
(4) CLINE
Prerequisite: History 8 or 156B or upper-division standing.
Survey of the events leading to the Mexican Revolution and its military phase (1910-1920). Through readings, lectures, films, and music students gain an understanding of the causes of the Revolution and its military, social, economic, and diplomatic course.

157A-B. History of Brazil
(4-4) DUTRA
Prerequisite: a lower-division course in history or upper-division standing.
A general survey of the history of Brazil in two quarters:
A. From the discovery of the New World to the formation of the empire. (Offered every other year; alternates with History 155A).
B. Modern Brazil. (Offered every other year; alternates with History 155B).

157C. Intellectual History of Brazil: Modern Period
(4) DUTRA
Prerequisite: a lower-division course in history or upper-division standing.
Focuses on the impact of intellectuals and ideas on Brazilian society in the nineteenth and twentieth centuries.

157P. Proseminar in the History of Brazil
(4) DUTRA
Prerequisite: upper-division standing.
May be repeated for credit to a maximum of 8 units.
Recommended preparation: Writing 109HU.
A weekly seminar on the history of Brazil in the colonial and modern periods. A research paper is required.

158A. History of Christianity in Latin America
(4) CLINE
Prerequisite: History 8 or upper-division standing.
Not open for credit to students who have completed History 158L.
A survey of Christianity in early Latin America: an examination of issues surrounding conversion of native peoples; establishment of the church as an institution; social issues regarding the church (race, class, gender); the church as an economic institution; the Inquisition and the regulation of social mores.

158AH-BH. History of Christianity in Latin America
(1-1) CLINE
Prerequisite: History 158A or 158B.
Honors seminar for History 158A-B.

158B. History of Christianity in Latin America
(4) CLINE
Prerequisite: History 8 or upper-division standing.
A survey of post-independence Christianity: institutional changes due to political independence; role of the church in Latin American politics; liberation theology; rise of evangelical Protestantism.

158P Proseminar in Latin American Christianity
(4) CLINE
Prerequisites: History 8 or upper-division standing.
Not open for credit to students who have completed History 158LP.
Recommended preparation: Writing 109HU.
A weekly seminar in the history of Christianity in Latin America. A research paper will be required.

159A-B. Women in American History
(4-4) COHEN, DEHART
Prerequisites: any two quarters of History 17A-B-C or upper-division standing.
Same course as Women's Studies 159A-B
Social history of women in America. Changing marriage, reproduction and work patterns, and cultural values about the female role. Attention to racial, class and ethnic differences. Analysis of feminist thought and the several women's movements.
A. Colonial period to 1800
B. From 1800-1900

159C. Women in American History
(4) COHEN, DEHART
Same course as Women's Studies 159C.
Social history of women in America. Changing marriage, reproduction and work patterns, and cultural values about the female role. Attention to racial, class and ethnic differences. Analysis of feminist thought and the several women's movements. From 1900 to the present.

159P. Proseminar in Women's History
(4) COHEN, DEHART
Prerequisite: History 159A or 159B or 159C or a prior course in women's studies.
May be repeated for credit to a maximum of 8 units.
Research seminar on the history of women in America.

160A. The American South to 1865
(4) HARRIS
Prerequisite: History 17A or upper-division standing.
The origins and development of distinctive economic, social, political, and cultural patterns in the ante-bellum South.

160B. The American South, 1865 to the Present
(4) HARRIS
Prerequisite: History 17B or 17C or upper-division standing.
Change and resistance to change in Southern economic, social, political, and cultural life since the Civil War.

160P. Proseminar in the History of the American South
(4) HARRIS
Prerequisite: History 160A or 160B.
May be repeated for credit to a maximum of 8 units.
Research in selected problems in the history of the American South.

161A-B. Colonial and Revolutionary America
(4-4) COHEN, PLANE
Prerequisite: History 17A or upper-division standing.
A social and political history of colonial and revolutionary America with emphasis on the interaction of Native American, Europeans, and African Americans. The course will combine lectures with discussion of both primary and secondary sources.
A. From initial settlement to the mid-eighteenth century
B. From mid-eighteenth century to 1800

161P. Proseminar in Early American History
(4) COHEN, PLANE
Prerequisite: History 17A or upper-division standing.
Recommended preparation: Writing 109HU.
A research seminar on early American history.

161Q. Special Studies in Early American History
(4) COHEN, PLANE
Prerequisite: History 17A or upper-division standing.
Readings and discussions on selected topics in early American history. Topics, which will change each year, include: witchcraft in comparative perspective (England and America), race in seventeenth-century America, work and labor in preindustrial America. Research paper will be required.

162A. The Age of Jefferson
(4) MAJEWSKI
Prerequisite: History 17A or upper-division standing.
History of the United States from the American Revolution to the War of 1812, emphasizing the creation of the federal government, the rise of political parties, and the emergence of national character.

162B. The Age of Jackson
(4) MAJEWSKI
Prerequisite: History 17A or upper-division standing.
History of the United States from 1815 to 1840, emphasizing the political, economic, and social transitions of that period, and the changes in popular attitudes and expectations which culminated in Jacksonian Democracy.

162P. Proseminar in American Political History From 1788-1840
(4) MAJEWSKI
Prerequisite: History 17B or 162A or 162B.
May be repeated for credit to a maximum of 8 units.
Recommended preparation: Writing 109HU.
Research seminar in the history of American political culture during the age of Jefferson and Jackson (1788-1840).

163A. Women and Public Policy in Twentieth-Century America
(4) DEHART
Prerequisite: History 159A or 159B or 159C or a prior course in women's studies.
Same course as Women's Studies 163A.
How gender-based cultural attitudes and social roles, collective action, and economic and social change interacted to shape law and public policy with respect to work, family, legal and reproductive rights. From 1900 through approximately 1945.

163B. Women and Public Policy in Twentieth-Century America
(4) DEHART
Prerequisite: History 159A or 159B or 159C or a prior course in women's studies.
Same course as Women's Studies 163B.
How gender-based cultural attitudes and social roles, collective action, and economic and social

change interacted to shape law and public policy with respect to work, family, legal and reproductive rights. From World War II to the present.

163P. Proseminar on Women and Public Policy Issues in Twentieth-Century America
(4) DEHART

Prerequisites: History 159A or 159B or 159C or 163A or 163B or a prior course in women's studies.

May be repeated for credit to a maximum of 8 units.

A research seminar utilizing team research and focusing on basic problems in public policy to be identified each year. Will use traditional sources and oral history, interviewing community leaders, government officials, etc. Individual papers will be integrated into group reports.

164C. Civil War and Reconstruction
(4) MAJEWSKI

Prerequisite: History 17B or upper-division standing.

A history of the United States during the second half of the nineteenth century. Emphasis is placed on the causes of the Civil War, the outstanding developments of the war itself, and the major consequences of the Reconstruction period.

164CP. Proseminar in Civil War and Reconstruction
(4) MAJEWSKI

Prerequisite: History 164C or History 17B.

May be repeated for credit to a maximum of 8 units.

Research seminar on events leading up to the outbreak of the Civil War.

164IA-IB. American Immigration
(4-4) SPICKARD

Prerequisite: History 17A or 17B or 17C or upper-division standing.

U.S. immigration history from the eighteenth century to the twentieth. Examines the forces that brought people from various parts of the globe to the U.S., their experiences in migrating and in subsequent generations, and enduring racial and ethnic hierarchies.

164IP. Proseminar on American Immigration History
(4) STAFF

Prerequisite: History 164I or History 17B.

May be repeated for credit to a maximum of 8 units.

Research seminar on American immigration history in the nineteenth and twentieth centuries and the evolution of American immigration.

164IQ. Special Topics in American Immigration
(4) CHAN

Prerequisite: Global Studies 1 or History 17A or 17B or 17C or upper-division standing.

Same course as Global Studies 164.

A survey of selected aspects of American immigration history in the nineteenth and twentieth centuries. Compares immigration from Europe, Asia, Latin America, and elsewhere within the framework of U.S. immigration policy and changing social, economic, political, and legislative conditions.

164PR. History of America's Racial Minorities
(4) VARGAS

Prerequisite: History 17A or 17B or 17C or upper-division standing.

Introduction to recent trends on race and ethnicity in U.S. history focusing on methodology and historiography. Examination and evaluation of research strategies and theoretical frameworks of selected historical literature on America's racial minorities and how these processes interface with other historical processes.

164Q. Nationalism and Politics in Civil War America
(4) MAJEWSKI

Analysis of the development of competing visions of nationalism from the standpoint of both North and South. Particular attention paid to primary sources produced by political leaders, ordinary soldiers, women, African Americans and other slaves.

165. America in the Gilded Age, 1876 to 1900
(4) FURNER

Prerequisite: History 17B or upper-division standing.

The responses of American people and institutions to the opportunities and problems of industrialization and rapid social change in the late nineteenth century.

166A. Recent History of the United States
(4) KALMAN, FURNER, O'CONNOR

Prerequisite: History 17B or 17C or upper-division standing.

Political, cultural, social, and economic development of the United States from 1900 to 1929.

166B-C. Recent History of the United States
(4-4) KALMAN, FURNER, O'CONNOR

Political, cultural, social, and economic development of the United States from 1930 to the present:

B. 1930-1959

C. 1960-present

166LA. United States Legal History
(4) STAFF

Prerequisite: upper-division standing.

The origins and evolution of American law from the colonial to progressive eras. Examines the development of the law in social context, considering the role of institutions, lawmakers, ideas, and the law in practice in tracing the law's history.

166LB. United States Legal History
(4) KALMAN

Prerequisite: upper-division standing

The evolution of American law from the progressive era to the present. Examines changes in the legal profession, legal education, jurisprudence, private law, and the Supreme Court.

166P. Proseminar in Twentieth-Century United States History
(4) KALMAN, FURNER, GARCIA, O'CONNOR

Prerequisites: History 166A or 166B or 166C.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A seminar for students who have completed History 166A-B and wish to pursue research projects on aspects of twentieth-century American history.

167A. Rise of the American Marketplace
(4) BROWNLEE

American economic development to the Civil War, including the dynamics of European colonial expansion, the impact of mercantilism and the Revolution, the growth and redistribution of population, and the sources of early industrialization.

167B. Development of American Industrial Society: 1860 to Present
(4) BROWNLEE

Economic and social history of the United States associated with the continuing industrial transformation of the nation, emphasizing a dynamic population and the changing organizational basis of industrial society, including the development of the modern corporation and the welfare state.

167C. History of American Labor
(4) BROWNLEE

An economic and social history of American labor, 1607 to present, treating patterns of economic and social opportunity, the structure and composition of the labor force (including the role of ethnic and racial minorities, women, and children), and the character of organized labor movements.

167CA. History of the American Working Class, 1800-1900
(4) VARGAS

Prerequisites: History 17A or 17B or sophomore or junior or senior standing.

A survey of the origins and formation of the American working class from the colonial period to the late nineteenth century. Topics include workers and community, the coming of the industrial order, the 1877 labor strike, and workers and the trade union movement.

167CB. History of the American Working Class, 1900-Present
(4) VARGAS

Prerequisites: History 17C or sophomore or junior or senior standing.

A survey of American workers from the turn of the century to the present period. Topics include workers and American socialism, the 1919 steel strike, the rise of the CIO, labor and the Cold War, and deindustrialization and workers.

167CP. Proseminar in American Working Class History
(4) VARGAS

Prerequisites: History 17A or 17B or 17C or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A research and writing seminar in American working class history with emphasis on the twentieth-century period. A major research paper will be required on a seminar related topic.

167D. History of American Business
(4) BROWNLEE

A survey of the history of business institutions in America, particularly since the rise of the corporate bureaucracies in the nineteenth century. Places business in context of development of both the economy and American society at large. Throughout, attention is paid to government-business relations.

167P. Proseminar in Economic History
(4) BROWNLEE

Prerequisite: a prior upper-division course in history.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A proseminar for students who wish to pursue independent inquiry into some aspect of the economic history of the United States.

168A-B. History of the Chicanos
(4-4) GARCIA, VARGAS

Prerequisite: any quarter of History 17A-B-C, or any quarter of Chicano Studies 1A-B-C, or upper-division standing.

Same course as Chicano Studies 168A-B.

The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

168E. History of the Chicano Movement
(4) GARCIA, VARGAS

Prerequisite: any quarter of Chicano Studies 1A-B-C or 10 or 168B, or History 10 or 168B, or upper-division standing.

Same course as Chicano Studies 168E.

An examination of the Chicano movement in the United States from the mid-1960s to the mid-1970s. Topics will include the student movement, the farmworker movement, the Plan de Aztlan, the Raza Unida Party, Chicana feminists, the anti-war movement, and Chicano studies.

168F. Racism in American History
(4) GARCIA

Prerequisite: any quarter of History 17A-B-C or any lower-division course in Asian American studies, Black studies, Chicano studies, or upper-division standing.

Same course as Chicano Studies 168F.

This course will examine racism as a major ideological force in defining American society from the colonial era to the 1980s. Major focus will be on the changing nature of racism as an ideology as well as the relationship of racism to specific minority groups such as Afro-American, Native-American, Chicano, and Asian-American.

168G. Autobiography in American History
(4) GARCIA

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

This course will examine the autobiography as a specific historical genre. Autobiographies involving a range of Americans and including class, race, ethnic, and gender issues will be examined as a way of interpreting the history of the United States.

168H. Literature and History in the American Experience
(4) GARCIA

Prerequisite: History 17A or 17B or 17C or upper-division standing.

Examination of a variety of literary texts, predominately novels, that provide key insights into the American historical experience. Texts are taken from particular historical periods from both the nineteenth and twentieth centuries and represent the various regions of the country.

168L. History of Chicano and Chicana Workers
(4) VARGAS

Prerequisite: History 168A or 16BB or Chicano Studies 168A or 168B.

Same course as Chicano Studies 194.

The history of Chicano and Chicana workers from the late nineteenth century to the contemporary period. Focus on worker responses to the changing structures of economic, social, and political relations determined by the evolution of American capitalism.

168LP. Proseminar on the History of Twentieth-Century Chicano and Chicana Workers
(4) VARGAS

Prerequisite: Upper-division standing.

Studies in selected aspects of Chicano/a with an emphasis on social, economic, and political history.

168P. Proseminar in Chicano History
(4) GARCIA

Prerequisites: History 168A or 168B, or Chicano Studies 168A or 16BB; and consent of instructor.

Same course as Chicano Studies 16BP. May be repeated for credit to a maximum of 8 units.

Studies in selected aspects of Chicano history with an emphasis on social and economic history.

168PA. Proseminar in Chicano History, Colonial to 1900
(4) VARGAS

Prerequisite: History 168A or 16BB, or Chicano Studies 168A or 168B.

Same course as Chicano Studies 168PA.

Study of Chicanos in the context of their everyday lives through historical texts from the Colonial period to 1900. Exploration of culture, race, gender, and ethnicity. Provides new ways to investigate the role of Chicanos in American history.

168PB. Proseminar in Chicano History, 1900 to the Present
(4) VARGAS

Prerequisite: History 168A or Chicano Studies 168B.

Same course as Chicano Studies 16BPB.

Study of Chicanos in the context of their everyday lives through historical texts from 1900 to the present. Exploration of culture, race, gender, and ethnicity. Provides new ways to investigate the role of Chicanos in twentieth-century American history.

169AR-BR-CR. Afro-American History
(4-4-4) DANIELS

Prerequisite: Black Studies 1 or 5, or History 17A or 17B or 17C, or upper-division standing.

Same course as Black Studies 169AR-BR-CR.

Influence/experience of Africans/African Americans in United States history.

AR. Origins and development of slavery and racism in British Colonies.

BR. Nineteenth-century expansion of slavery, Anti-slavery, Civil War, Reconstruction and development of segregation.

CR. Twentieth-century New South, urban migration and desegregation.

169M. History of Afro-American Thought
(4) DANIELS

Prerequisites: History 169A-B; consent of instructor.

Study of the development of Afro-American thought from the 1860s to the 1960s as reflected in intellectual and popular media.

169P. Proseminar in Afro-American History
(4) DANIELS

Prerequisite: History 169A or 169B.

May be repeated for credit to maximum of 8 units.

Studies in nineteenth- and twentieth-century Afro-American history, with an emphasis on society, culture, and race relations.

169SA. Major Issues in Asian American History
(4) CHAN

Prerequisites: Asian American Studies 1; upper-division standing.

Same course as Global Studies 169.

Historical and contemporary issues related to Asian immigration into the United States: immigration exclusion, denial of naturalized citizenship and the franchise, economic and social discrimination, and cultural denigration; efforts by Asian Americans to both resist and adapt to such injustice.

170A-B. A History of Social Policy in the United States
(4) BERGSTROM, O'CONNOR

Prerequisite: History 7 or 17A or 17B or 17C or upper-division standing.

Not open for credit to students who have completed History 148A-B.

Study of the identification, formation, and consequences of social policy in the United States over the past 200 years. Policies toward poverty, civil rights, family and population, health, education, crime, religion, and urban development are studied, among others.

170P. Proseminar in United States Social Policy History
(4) BERGSTROM, O'CONNOR

Prerequisite: History 17B-C; or History 14BA-B; or History 172A-B.

Not open for credit to students who have completed History 148P.

Recommended preparation: Writing 109HU.

A research seminar in selected social policy issues of the nineteenth and twentieth centuries in the United States.

171A. The United States and the World to 1917
(4) LOGEVALL

Prerequisite: a lower-division history course or upper-division standing.

The theory and practice of American foreign policy from colonial times to 1917.

171B. The United States and the World, 1917 to the Present
(4) LOGEVALL

Prerequisite: a lower-division history course or upper-division standing.

Analysis of twentieth-century developments in foreign affairs. Emphasis on broad policy, concepts, and ideas.

171P. Proseminar in American Diplomacy and Politics
(4) LOGEVALL

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

This is a seminar that will focus on training in historical research methods. It will require an essay on some aspect of American history, most likely in the areas of diplomacy and politics, chosen jointly by the student and the instructor.

171Q. Readings and Discussions on Cold War History
(4) LOGEVALL

Prerequisite: History 171B.

The theory and practice of American foreign policy toward the Communist bloc during the era of the Cold War, or approximately 1945 to 1989. The course revolves around a dialogue between students and instructor based on written analyses of the literature.

172A-B. Politics and Public Policy in the United States.
(4-4) BERGSTROM, FURNER, O'CONNOR

Prerequisites: History 7; or any two quarters of History 17A-B-C; or upper-division standing.

The interaction of politics and public policy from the Revolution to the present, focusing upon the key issues of each era in social, economic, cultural, racial, and other policy areas. A particular concern for the policy-making process, ideology, and the cultural origins of politics.

172P. Public Policy Issues in the 1960s
(4) BERGSTROM, FURNER, O'CONNOR

Prerequisites: History 172A-B.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Proseminar in the history of public policy. A research seminar utilizing team research method to explore major policy questions in the Kennedy-Johnson-Nixon era.

173A. American Intellectual History
(4) GLICKSTEIN

Prerequisites: History 17A.

The evolution of the principal systems of thought concerning God, nature, humanity and society from the colonial period to about 1900. The course will divide circa 1800.

173B. American Intellectual History
(4) GLICKSTEIN

Prerequisites: History 17A or 17B.

The evolution of the principal systems of thought concerning God, nature, humanity and society from the colonial period to about 1900. The course will divide circa 1800.

173P. Proseminar in American Intellectual History
(4) GLICKSTEIN

Prerequisite: upper-division standing.

An undergraduate research seminar in topics in American intellectual history.

173Q. Reading Seminar in American Intellectual History
(4) GLICKSTEIN

Prerequisite: History 173A-B.

May be repeated for credit to a maximum of 8 units.

Reading seminar on American intellectual history.

173S. American Popular Cultural History
(4) STAFF

Prerequisite: History 17B or 17C or upper-division standing.

Traces the origins and development of popular culture in modern industrial America, 1860 to the present. Emphasis is on the ideas, attitudes, and values reflected in mass entertainment media such as popular literature, motion pictures, radio, television, and popular music.

173SP. Proseminar in American Popular Cultural History
(4) STAFF

Prerequisite: History 173S.

May be repeated for credit in combination with History 173PS to a maximum of 8 units.

Recommended preparation: Writing 109HU.

An undergraduate research seminar in topics on the history of American popular culture.

173T. American Environmental History
(4) STAFF

Prerequisite: Environmental Studies 1; or a lower division course in history.

Same course as Environmental Studies 173.

Traces the history of American attitudes and behavior toward nature. Focus on wilderness, the conservation movement, and modern forms of environmentalism.

174A-B-C. Wealth and Poverty in America
(4-4-4) GLICKSTEIN, FURNER, O'CONNOR

Prerequisite: History 17A or 17B or 17C or upper-division standing.

Changing patterns and conceptions of inequality, seventeenth century to present. Examines influence of economic transformation, race, gender, class, attitudes towards work and welfare, social movements, social knowledge, law and public policy on opportunity, income, status, and power. Divides at Civil War and World War II.

174P. Proseminar in Wealth and Poverty in America
(4) GLICKSTEIN, FURNER, O'CONNOR

Prerequisite: History 174A or 174B or 174C.

Recommended preparation: Writing 109HU.

A proseminar for undergraduate students who wish to pursue independent research on social class in America, lives of rich and poor, economic and social policy, the rise and present controversy over the welfare state, and related questions.

175A-B. American Cultural History
(4-4) STAFF

Prerequisite: a prior course in history.

A study of dominant and alternative representations of American values and identity in high and popular culture.

175D. American Family History
(4) STAFF

Prerequisite: History 17A or 178 or 17C.

Examines how race, ethnicity, and class have shaped changing attitudes toward and experiences of sex roles, sexuality, child rearing, work patterns, and relationships among men, women, and children. Also explores changing conceptions of the state's role in family life.

175P. Proseminar in American Cultural History
(4) STAFF

Prerequisite: a prior course in history.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A research seminar on the use of artifacts in American cultural history.

176A-B. The American West
(4-4) STAFF

Prerequisite: a lower-division course in history or upper-division standing.

The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

176P. Proseminar in the History of the American West
(4) STAFF

Prerequisites: History 176A-B.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

The study of special topics in the history of the American west.

177. History of California
(4) STAFF

Prerequisite: a lower-division course in history or upper-division standing.

California as a case study of national trends, and as a unique setting with its special problems and culture.

177P. Proseminar in California History
(4) STAFF

Prerequisite: History 177.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A research and writing seminar on the history of California.

178A-B. American Urban History
(4-4) O'CONNOR

Prerequisites: any two quarters of History 17A-8-C or upper-division standing.

A study of the political, economic, social, and intellectual impact of the city upon American history, and the impact of history upon the growth of American urbanization.

178M. History of American Urban Crime
(4) STAFF

Prerequisite: a lower-division history course or upper-division standing.

The historical evolution of organized crime in the nineteenth and twentieth centuries: its structure, interpretations, ethnicity, illicit enterprises, and impact upon the American city.

178MP. Proseminar in American Urban History or American Urban Crime
(4) STAFF

Prerequisite: History 178M or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A research and writing seminar. The student will choose a topic in either American urban history or the history of American urban crime and write a paper.

178P. Proseminar in American Urban History
(4) O'CONNOR

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

An undergraduate research and writing seminar. Students write papers on a topic involving American urban history.

178Q. Studies in American Urban History
(4) O'CONNOR

Prerequisites: History 178A-8.

A reading and discussion course limited to ten students.

179A. Native American History to 1838
(4) PLANE

Prerequisite: History 17A or upper-division standing.

A lecture course on the history of the indigenous peoples of North America from European contact to Cherokee removal. The course stresses comparative cultural responses to European colonization and American history from a native point of view.

179B. Native American History, 1838 to Present
(4) PLANE

Prerequisite: History 17B or 17C or upper-division standing.

A lecture course on the history of the indigenous peoples of North America from Cherokee removal to the present. The course stresses native history, relations with the U.S. government, and offers American history from a native point of view.

179P. Proseminar in Native American History
(4) PLANE

Prerequisite: History 179A or 179B or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Research seminar on the history of the indigenous peoples of North America.

180A-B-C. History and Culture of East Asia
(4-4-4) FOGEL

Prerequisite: upper-division standing.

Same course as East Asian Cultural Studies 180A-8-C.

An introduction to the history and cultures of the major civilizations of East Asia: China, Japan, Korea, Vietnam. Emphasis on the shared historical experience of the region and cultural unity and diversity.

A. Prehistory to 600
B. 600-1600
C. 1600-1945

180P. Proseminar in East Asian History and Culture
(4) FOGEL

Prerequisite: History 80 or 87 or 180A or 1808 or 180C; or, East Asian Cultural Studies 80 or 180A or 1808 or 180C; upper-division standing.

Same course as East Asian Cultural Studies 180P.

Reading and research on selected issues in the history of East Asia with emphasis on the cultural interconnectedness of the region.

181A. The City in East Asian Perspective
(4) ELLIOTT, ROBERTS

Prerequisite: History 185A or 1858 or 187A or 1878 or 187C.

A reading seminar that explores the development of cities in China and Japan in the early modern and modern eras. Examination of the changing demography and geography of East Asian cities looking carefully at urban cultural and political life in a broadly comparative context.

182A. Korean History and Civilization: Part I
(4) PAI

Same course as Korean 182A. Not open for credit to students who have completed History 180DA or Korean 180DA.

The history of Korea from prehistory to the rise of states and kinship, Buddhism, Confucianism, cultural interaction with China, Japan, and the Mongols.

182B. Korean History and Civilization: Part II
(4) PAI

Same course as Korean 1828. Not open for credit to students who have completed History 180D8 or Korean 180DB.

Survey of the history of Korea from the Yi dynasty to the present day. Topics include Yangban society, Japanese invasions, the Korean War, and political division.

182E. Korean Art and Archaeology
(4) PAI

Prerequisite: History 80 or 82 or upper-division standing.

Not open for credit to students who have completed History 180E, or Korean 182E, or Korean 180E.

Selected archaeological and architectural works of art that demonstrate Korean technological and artistic achievements. Analysis of technology and construction and relationship of art to architecture that reflect developments in society and religion. Surveys Korean arts traditions in ceramics, Buddhist sculpture, paintings, metallurgy, and woodwork.

182P. Proseminar in Korean History
(4) PAI

Same course as Korean 182P. May be repeated for credit to a maximum of 8 units.

Undergraduate research seminar in Korean history.

184A-B. History of China
(4-4) FOGEL

Prerequisite: a lower-division course in history or upper-division standing.

Same course as Chinese 184A-8. Not open for credit to students who have completed History 186A-8 or Chinese 186A-8.

A. Ancient China, to 589 CE
B. Sixth to seventeenth centuries.

184E. Chinese Archaeology
(4) PAI

Prerequisite: upper-division standing.

Not open for credit to students who have completed History 180F or Chinese 184E, or Chinese 180F.

An overview of Chinese archaeology from the Paleolithic to the unification of China (221 BC). Emphasis on the discussion of various aspects of Early China such as art, ritual, writing, politics, economy, and their interrelationships.

184P. Proseminar in History of China
(4) FOGEL

Prerequisite: History 184A or 1848, or Chinese 184A or 184B.

Same courses as Chinese 184P. May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Undergraduate research in history of China.

184T. History of Chinese Thought
(4) FOGEL

Prerequisite: upper-division standing.

Same course as Chinese 184T. Not open for credit to students who have completed History 190C.

A study of the development of Chinese thought from Confucius to Mao Tse-tung.

184W. Chinese Historiography
(4) FOGEL

Prerequisite: upper-division standing.

Same course as Chinese 184W. Not open for credit to students who have completed History 190W.

An examination of the major historical traditions of China over the past 2500 years: debates, texts, historians, patronage, impact of Marxism and communism (in the twentieth century).

185A-B. Modern China
(4-4) ELLIOTT

Prerequisite: a lower-division course in history or upper-division standing.

Survey of the last four centuries of Chinese history, from the late Ming dynasty to the People's Republic of China. Examines social, economic, political, and cultural developments as part of an exploration of the sources of Chinese unity, the accomodation of Manchu power, the nature of "traditional" society, and the problems of modernization in the world's only ancient empire to survive to the present day.

A. Ca. 1600 to 1911

B. From 1911 to present

185L. Chinese Readings in History
(4) ELLIOTT

Prerequisite: consent of instructor.

Texts from both Taiwan and the Mainland are used to introduce essential vocabulary and basic modes of interpretation. For students interested in Chinese history who wish to acquire the skills to read secondary scholarship in the Chinese language.

185P. Proseminar on Modern China
(4) FOGEL, ELLIOTT

Prerequisite: History 185A or 185B.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

Undergraduate research seminar in the history of modern China.

186D. The Issue of Democracy and the Chinese Tradition
(4) STAFF

Prerequisite: upper-division standing.

Analysis and discussion of major Chinese writings that touch on issues related to democracy: critique of aristocracy, popular power, political representation and participation, etc.

186M. Chinese Marxism
(4) FOGEL

Prerequisite: upper-division standing.

Same course as Chinese 186M. Not open for credit to students who have completed History 185M.

Introduction to the most influential system of thought in twentieth-century China. Examination of the background of Marxism's coming to China, its role in military thinking, education, feminism, the place of the intellectual, Mao's thought, etc.

187A. Japan Under the Tokugawa Shoguns
(4) ROBERTS

Prerequisite: History 87 or upper-division standing.

A survey of Japanese social and cultural history from the mid-sixteenth to the nineteenth century.

187B. Modern Japan
(4) ROBERTS

Prerequisite: History 87 or upper-division standing.

A survey of Japanese history from the early nineteenth century until World War II, in an effort to explain how, and at what price, Japan became the first successful modernizer in the nonwestern world.

187C. Recent Japan
(4) ROBERTS

Prerequisite: History 87 or upper-division standing.

The history of Japan since World War II, dealing with the American occupation, economic recovery and growth, social change, and political development.

187P. Proseminar in Japanese History
(4) ROBERTS

Prerequisite: History 87 or 187A or 187B or 187C or upper-division standing.

May be repeated for credit to a maximum of 8 units.

Recommended preparation: Writing 109HU.

A research seminar in Japanese history. Topics will vary depending on the interests and background of the participants. Reading knowledge of Japanese is not required.

188A. History of Women in China: From the Ancient Period to the Nineteenth Century
(4) JUDGE

Exploration of the diverse roles women have played in Chinese culture and society up to the nineteenth century by examining the many contexts within which women operated: the family, the imperial court, literati and popular culture.

188B. History of Women in China: From the Late Nineteenth Century to the Present
(4) JUDGE

Examination of the role of women in culture, politics, and society in China's "century of revolution." Exploration of their participation in revolutionary and women's movements and their daily lives in the family and the workplace.

189A. Vietnamese History
(4) FOGEL

Same course as East Asian Cultural Studies 189A. Not open for credit to students who have completed History 138A.

An introduction to the history of Vietnam and its place in East and Southeast Asia. Vietnamese history from antiquity through the early twentieth century.

189E. History of the Pacific
(4) SPICKARD

Not open for credit to students who have completed Asian American Studies 150.

Peoples, cultures, social systems, politics, and economics of the islands of the Pacific. Prehistory, early contacts with outside peoples, colonial regimes, the transformation of colonialism, and recent developments. Contemporary issues include regional cooperation, neocolonialism, and emigration.

189SE. Modern Southeast Asia
(4) CHAN

Prerequisite: upper-division standing.

Same course as Global Studies 141.

Selected aspects of the modern history of Southeast Asia: cultural legacies, colonial rule, World War II, post-war struggles for political independence, regional cooperation and conflict, economic development and its sociopolitical impacts, interethnic tensions and political stability, and environmental problems.

191A. Diplomatic History of the Great Powers, 181S-1914
(4) HASEGAWA

Prerequisite: History 4C.

A diplomatic history of great powers from the Congress of Vienna to World War I, emphasizing the international system created by great powers in Europe and shifting alliances and balance of power leading to World War I.

191B. Diplomatic History Between the World Wars
(4) HASEGAWA

Prerequisite: History 4C.

A diplomatic history between the two World Wars. Changes in foreign relations resulting from the rise of fascism, Communism, and militarism in Europe and Asia.

191C. History of the Cold War, 1945-1991
(4) HASEGAWA

Prerequisite: History 4C.

The history of the Cold War from 1945-1991. Emphasis on US-Soviet relations, as well as the Cold War in Europe, Asia and the Third World.

191P. Proseminar on the Cold War
(4) HASEGAWA

Prerequisites: History 4C and History 191C.

Proseminar on the Cold War. Students write a research paper on a topic dealing with an aspect of the Cold War, using primary sources.

194AH-BH-CH. Senior Honors Seminar
(4-4-4) STAFF

Prerequisite: consent of instructor; admission to senior honors program.

Four of the 12 units of History 194AH-BH-CH may be applied toward the major.

Recommended preparation: Writing 109HU.

Students taking part in departmental honors program will write a senior thesis on a research topic of suitable depth under close supervision of faculty mentors.

195IA-IB. Senior Thesis—Public Policy
(4-4) STAFF

Prerequisites: a major in history of public policy; senior standing; consent of instructor.

Students should enroll by instructor number. Eight units of credit will be awarded at the end of two quarters assigned for the thesis. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 195IB.

A two-quarter individual research project, under the direction of a history professor selected with the advice of the departmental advisor to public policy students.

196. Internship in History
(2-8) STAFF

Prerequisites: upper-division standing; consent of department.

Students must have a 3.0 overall grade-point average. May be repeated for up to 8 units.

This course enables students to obtain credit for history-related internship experience, such as in the Capitol Hill or Sacramento programs. The course is graded P/NP and must be taken in conjunction with History 199, for which a written project related to the internship experience must be completed.

199. Independent Studies
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in history; consent of department and instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students must be majors in history or present justification to both the instructor and the department for diverting from this norm. No more than 8 units of History 199 may be applied to the majors in history or the history of public policy.

The description of any one 199 must not be identical to any existing course description.

199RA. Independent Research Assistance
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in history; consent of department and instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Faculty supervised research. Written work is usually required.

GRADUATE COURSES

200AF-AM-AS-C-E-G-HS-LA-ME. Historical Literature
(4) STAFF

May be repeated for credit.

A reading course in a general area of history, specifically designed to prepare M.A. candidates for their comprehensive examination fields, but also appropriate for Ph.D. students seeking broad preparation. Introduces the student to the sources, historiography, and general literature of the field in question.

AF. Africa

AM. America
AS. Asia
C. Comparitive
E. Europe
G. Historical Literature
HS. History of Science
LA. Latin America
ME. Middle East
W. World

201AF-AM-C-E-G-HS-LA-LI-ME-PP. Advanced Historical Literature
(4) STAFF

May be repeated for credit. Open to both M.A. and Ph.D. candidates.

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. (Usually offered quarterly.)

AF. Africa
AM. America
C. Comparitive
E. Europe
G. Gender
HS. History of Science
LA. Latin America
LI. Latin America and Iberia
ME. Middle East
PP. Public Policy
WO. World

201AS. Advanced Historical Literature
(4) STAFF

Same course as East Asian Cultural Studies 201AS. May be repeated for credit. Open to both M.A. and Ph.D. candidates.

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. (Usually offered quarterly.)

201W. Historical Writing
(4) STAFF

Prerequisite: graduate standing.

Professional writing: dissertations, conference papers, essays, articles, chapters, books, and other contributions. Graduate students bring previously prepared materials for perfection in organization, clarity, grammar, punctuation, vocabulary, documentation, footnote and bibliography forms, foreign languages and charts.

202. Proseminar in Historical Methods
(4) SONNINO

Normally required of all entering M.A. candidates other than those in public history. Open to other students on a space available basis.

A general introduction to selected historiographical issues and historical methods. (F)

203A-B. Seminar in Comparative History
(4-4) RAPPAPORT

A two-quarter in-progress sequence course with grade for both quarters issued upon completion of History 203B.

Research seminar in selected issues in comparative history. Such topics might include urban history, history of religion, slavery, family, gender systems, and consumer societies. Themes vary with instructor.

205A-B. Public Historical Studies
(4-4) BERGSTROM

Prerequisite: admission to graduate program in public historical studies.

To acquaint students with relevant research methods (oral history, legal research, family history, government documents and sources, historical preservation, field research).

206. History and Theory
(4) STAFF

An introduction to the major theoretical debates within the historical profession over questions of epistemology, methodology, and interpretation.

207. Historical Methods and the Social Sciences
(4) BROWNLEE, HARRIS, COHEN

Exploration of the application of social science theory and methodology, including quantitative analysis, to the historical study of social structure and mobility, demographic change, distribution of political power, voting behavior, legislative behavior, interaction of public policy and economic development, and distribution of income and wealth.

208. Problems of Historical Preservation
(4) STAFF

Prerequisite: graduate standing.

Problems of historical preservation using archives, museums, and historic sites and buildings of the Santa Barbara area as a laboratory.

209A-B. The Academic Profession of History
(4-4) STAFF

This course provides students with the practical knowledge needed for obtaining an academic position, develops skills for effective teaching, and prepares students to deal with funding agencies, publishers, employers, and professional organizations.

209H. Historical Editing and Publishing: The Journal
(4) STAFF

Prerequiste: undergraduate degree in history.

This course will aquaint students in academic and public history (also anthropology, architectural history, folklore, etc.) with the basic issues in editing and publishing, with special emphasis on the historical journal.

211A-B. Seminar in Greek History
(4-4) STAFF

Prerequisite: reading knowledge of French, German or Italian.

Research seminar in Greek history. From time to time the seminar will be limited to candidates specializing in ancient history, and with a reading knowledge of classical Greek.

213A-B. Seminar in Roman History
(4-4) DRAKE

Prerequisite: reading knowledge of appropriate foreign language.

Selected topics in the history of the Roman Republic and Empire, with particular emphasis on problems of the later Roman Empire.

214A-B. Seminar in Medieval Church History
(4-4) STAFF

Prerequisites: consent of instructor.

Research seminar in the medieval church, especially movements of dissent and the history of concepts.

215A-B. Seminar in Medieval History
(4-4) LANSING

Prerequisite: History 116.

A two-quarter course.

21SE-F. Research Seminar in Medieval Social History
(4-4) FARMER

Prerequisite: History 117A.

A two-quarter graduate research seminar in medieval social history.

21SG. Advanced Studies in Medieval History.
(4) LANSING

Prerequisite: History 215.

A one-quarter research seminar.

21SS. Paleography
(4) STAFF

Recommended preparation: knowledge of languages other than Latin and English.

Practical experience in locating, reading, and evaluating manuscript material placed in its cultural, scholarly, institutional, and human setting. Goals include giving students knowledge of and experience with manuscript research on the Middle Ages and manuscript culture of the medieval period.

21ST. Diplomatics
(4) STAFF

Practical experience in locating, reading, and evaluating documents and manuscripts from England, France, Italy, and Spain. Material will be placed in its cultural, scholarly, institutional, and human setting. Other topics include growth of the state and elaboration of social control.

216A. Colloquium in Community History
(4) HARRIS

A reading course that explores a broad array of historical and social science approaches to the study of the community.

216B-C. Seminar in Community History
(4-4) STAFF

Designed to introduce M.A. and Ph.D. candidates to basic problems of doing ongoing research in community history; will examine role and activities of individuals, groups, institutions, associations, and corporations. Each year a different basic problem will be identified and students will carry out a research project as a team. Research will be carried out in Santa Barbara, with a close liaison with the Santa Barbara Historical Society.

217A. Colloquium in Cultural Resource Management
(4) STAFF

Colloquium in cultural resource management. A course of intensive readings in the identification, preservation, and interpretation of cultural resources. Includes such topics as cultural surveys, historic preservation, and impact mitigation.

217B-C. Seminar in Cultural Resource Management
(4-4) STAFF

A two-quarter research seminar involving team research and publication of results. Projects will include such tasks as cultural surveys, determination of significance, eligibility for inclusion on National Register, impact mitigation, and historic preservation.

217D. Feminist Perspectives of Jewish and Christian Tradition
(4) FARMER, HECHT

Prerequiste: consent of instructor.

Same course as Interdiscplinary 201HF.

This seminar examines selected "clanic" texts (Biblical, Talmundic, Patristic) dealing with women, gender, and sexuality; as well as historic and contemporary issues, reinterpretations and responses to those texts.

218A. Colloquium in Policy History
(4) BERGSTROM, FURNER, O'CONNOR

Readings in the fundamentals of policy history, including selections in social theory, governance, political economy, knowledge production, political culture and comparative analysis. Offered as foundations course for students with a broad range of more specialized policy interests.

218B-C. Seminar in Policy History
(4-4) BERGSTROM, FURNER, O'CONNOR

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 218C.

A two-quarter research seminar on select topics in policy history.

219A-B. Research Seminar in Gender and History
(4-4) DEHART

Prerequisite: graduate standing.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 219B.

A two-quarter research seminar involving gender analysis of late nineteenth and twentieth century topics in U.S. history.

219C-D. Research Seminar in Gender and Public Policy
(4-4) DEHART

Prerequisite: graduate standing.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 219D.

A two-quarter research seminar involving gender analysis of public policy issues in the United States.

219E. Colloquium in Gender and Policy
(4) DEHART

Prerequisite: graduate standing.

A one-quarter colloquium involving historical and social scientific readings on the history and theory of public policies relating to gender and gender justice in the United States.

220A-B. Seminar in Renaissance-Reformation
(4-4) FRIESEN

Prerequisite: reading knowledge of one western European language besides English.

Research seminar, stressing problems in comparative European social and intellectual history, 1450-1650.

223. Topics in Modern European History
(4) STAFF

A one-quarter seminar on special topics in modern European history.

223A-B. Seminar in Modern European History
(4-4) TALBOTT, LINDEMANN, MOURÉ

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 223B.

A research seminar in selected topics in the history of Europe, 1815 to the present.

224A-B. Seminar on the History of Biology in the Twentieth Century
(4-4) STAFF

Prerequisite: consent of instructor.

Two-quarter seminar on biology in the twentieth century. The modern synthesis, population biology, ecology, genetic engineering.

226. Research Seminar in Women and Nationalism
(4) JUDGE

Exploration of both the direct roles women have played in nationalist movements in different parts of the world, east and west, as well as the diverse ways the symbol of woman has been appropriated by such movements.

227A-B. Research Seminar in European Socialism, Nineteenth and Twentieth Centuries.
(4-4) LINDEMANN

229A-B. Seminar in Early Modern European History
(4-4) SONNINO

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 229B.

Research seminar on topics in Early Modern European history.

230A-B. Seminar in European Economic History
(4-4) MOURÉ

Prerequisite: reading knowledge of appropriate foreign languages.

Research seminar in selected issues in European economic history.

232A-B. War Studies
(4-4) TALBOTT

Prerequisite: consent of instructor.

Not open for credit to students who have completed History 238A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 232B.

A two-quarter research seminar on topics in war, the state, and society since 1789. Origins and consequences of wars and the political, social, and economic aspects of both land and sea warfare will be considered.

233A-B. Seminar in Modern German History
(4-4) MARCUSE

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 233B.

A two-quarter research seminar for graduate students interested in aspects of nineteenth and twentieth century German history. Students will learn and apply researching techniques, as well as writing, editing and presentation skills.

233H. Jurgen Habermas and His Critics
(4) FOGEL, MARCUSE

Reading and discussion of the major writings of Jurgen Habermas in the context of the many debates his work has elicited and engaged.

233L. George Lukacs: His Writings and Politics
(4) FOGEL

Reading and discussion of the major works and politics of George Lukacs.

235A-B. Seminar in Russian History
(4-4) HASEGAWA

Prerequisite: reading knowledge of appropriate foreign language.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 235B.

A two-quarter research seminar on selected topics in modern Russian history.

235CA-CB. Graduate Seminar in Soviet History
(4-4) HASEGAWA

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 235CB.

Recommended preparation: Reading knowledge of Russian.

A two-quarter intercampus seminar on Soviet history, team taught by specialists at UC campuses in Southern California.

240A-B. Seminar in Tudor-Stuart History
(4-4) MCGEE

Research seminar in Tudor-Stuart history; selected topics requiring use and interpretation of primary sources.

241A-B. Seminar in Modern British History
(4-4) RAPPAPORT

Research seminar. Students must take two consecutive quarters.

243A-B. Research Seminar in Renaissance and Early Modern Europe
(4-4) BERNSTEIN

Prerequisite: graduate standing and reading knowledge of appropriate foreign language(s).

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 243B.

A research seminar on selected topics in European history, from the fourteenth to seventeenth centuries.

244A-B. Research Seminar in African History
(4-4) MIESCHER

Prerequisite: History 201.

Not open for credit to students who have completed History 248A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 244B.

A two-quarter research seminar on selected topics in African history.

245. Special Topics in Islamic History
(4) HUMPHREYS

Prerequisite: graduate standing.

Research topics in Islamic and Middle Eastern history which can be completed within a one-quarter framework.

245A-B. Seminar in Islamic History
(4-4) HUMPHREYS

Prerequisites: consent of instructor; graduate standing.

Research seminar on selected topics in the social and political history of the Islamic Middle East between A.D. 600 and 1700. Language requirements will vary.

246A-B. Postcolonial and Postmodern Discourses on Africa and the Middle East: Points of Contention
(4) GALLAGHER

Prerequisite: one upper-division course in African or Middle Eastern history.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 246B.

A two-quarter seminar focusing on the writings of major postcolonial and postmodern theorists in the context of Middle Eastern and African history. Students will suggest materials for the Reader and will lead weekly discussions. One term paper is required.

251A-B. Seminar in Latin American History
(4-4) CLINE

Prerequisites: graduate standing; reading ability in Spanish.

Two-quarter sequence course; final grade given upon completion of History 251B.

A two-quarter research seminar on a given topic. Topics may include religion and politics from the colonial era to the present, colonial Indians, evolution of Latin American society, methods of social history.

252A-B. Seminar in Social and Intellectual History of Modern Latin America
(4-4) STAFF

Prerequisites: History 151B-C, 152B, and 201.

Seminar on nationalism in Latin America.

253A-B. Special Seminar in Latin American History
(4-4) ROCK

A two-quarter seminar. Available on demand.

Discussion meetings for postgraduates. Reading, research, and writing in the history of Latin America in subject of student's choice.

254A-B. Latin America, Spain, and Portugal
(4-4) DUTRA

Prerequisite: reading knowledge of Spanish or Portuguese required (in special cases, French, German, Dutch, or Italian acceptable.)

Individual reading, research, and writing in the history of Spain, Portugal, and their empires in the Americas, Africa, and Asia. For Brazil and Mexico, national periods included.

256A-B. Seminar in Mexican History
(4-4) CLINE

Prerequisites: graduate standing; reading knowledge of Spanish.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 256B.

A two-quarter seminar on selected topics in the socioeconomic history of colonial Mexico.

257A-B. Seminar in Luso-Brazilian History
(4-4) DUTRA

Research seminar with particular stress on Portuguese, Spanish, and Brazilian archival materials. Course will provide graduate students with opportunity to analyze problems in the history of Portugal and her overseas empire with special emphasis on Brazil.

258A-B. Seminar in the History of Christianity in Latin America
(4-4) CLINE

Prerequisite: reading knowledge of Spanish or Portuguese.

Not open for credit to students who have completed History 258LA-LB. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 258B.

Research seminar on the history of Christianity in Latin America.

259A-B. Seminar in American Social History
(4-4) COHEN

A two-quarter research seminar on selected topics in the "new" social history, including the history of women and the family. (Offered infrequently.)

260A-B. Seminar in American South
(4-4) HARRIS

Research in nineteenth- and twentieth-century Southern history.

261A-B. Seminar in Colonial and Revolutionary America
(4-4) COHEN, PLANE

A two-quarter research seminar on colonial and revolutionary America.

264A-B. Seminar in Civil War and Reconstruction
(4-4) MAJEWSKI

264IA-IB. American Immigration
(4-4) STAFF

Not open for credit to students who have completed History 263A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 264IB.

A research seminar in the history of American immigration, particularly during the nineteenth and early twentieth centuries.

265A-B. Seminar in American Political and Social History
(4-4) HARRIS

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 265B.

Research in American political and social history of the nineteenth and early twentieth centuries.

266A-B. Research Seminar in Recent U.S. History
(4-4) KALMAN

A research seminar for graduate students interested in any aspect of recent U.S. history.

266L. Seminar in American Legal History, 1890-1960
(4) KALMAN

Prerequisite: consent of instructor.

Not open for credit to students who have completed History 291.

A survey of American legal history from 1890 to the present with special emphasis on the Supreme Court, legal history, legal education, and private law.

267A-B. Seminar in American Economic History
(4-4) BROWNLEE

267D. Research Seminar in History of American Business
Not open for credit to students who have completed History 279.

Readings in the history of American business. Survey of market strategies, the development of corporate hierarchies, the role of the economic, cultural, and political environments shaping business behavior, and the effect of business on both the economy and American society at large.

268A-B. Seminar on Ethnicity and Community
(4-4) GARCIA

Prerequisite: consent of instructor.

A two-quarter research seminar on historical development of ethnic communities in the United States. Focus on community institutions such as the family, the church, voluntary associations, and the ethnic press. Particular research emphasis will be on Santa Barbara and Southern California ethnic communities.

268CA-CB. Seminar in Chicano History
(4-4) GARCIA

Not open for credit to students who have completed History 249A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 26BCB.

This two-quarter research seminar explores various facets of Chicano history, but concentrates on the twentieth century. Examination of literature, an projects covering immigration, labor, women, the Mexican-American generation, and the Chicano movement.

268D. Topics in Asian American History
(4) CHAN

May be repeated for credit.

An assessment of the major works in Asian American historiography. Topics include emigration from Asia, immigration into the United States, and the immigrants' social, cultural, economic, and political life.

269AR-BR. Afro-American History Research Seminar
(4-4) STAFF

Prerequisites: History 169AR-BR-CR or directed readings.

Not open for credit to students who have completed History 247A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 269BR.

This course provides students the opportunity to research in primary source materials in Afro-American history from colonial times to the present and write a research paper. Focus on Afro-Americans in the United States, and to a lesser degree, elsewhere.

270. Seminar in Tangible Resources—Environmental History
(4) STAFF

Study of the value and management of the visible past. Emphasis on the ways public agencies like the National Park Service designate and display historic buildings, trails, villages, and ways of life. Mandatory and optional field trips. Career opportunities stressed.

270A-B. Seminar in United States Social Policy
(4-4) BERGSTROM, O'CONNOR

Not open for credit to students who have completed History 210A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 270B.

Research seminar in selected issues in United States social policy.

271A-B. Seminar in Diplomatic and Political History of the United States
(4-4) LOGEVALL

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 271B.

A two quarter research seminar on modern American diplomatic and political history.

272A-B. Seminar in American Political and Intellectual History
(4-4) GLICKSTEIN, FURNER

Prerequisites: graduate standing and consent of instructor.

A two-quarter in progress seminar.

General research seminar on the history of politics and ideas in the United States, broadly conceived.

273A-B. Research Seminar in American Social and Intellectual History
(4-4) GLICKSTEIN

275A-B. American Cultural History
(4-4) STAFF

Student must take two consecutive quarters.

276A-B. Seminar in American West and California
(4-4) STAFF

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 276B.

Two-quarter research seminar on topics in the history of the American West or California.

277A-B. Topics in the History of Science
(4-4) BADASH

Research seminar selected from such topics as Babylonian astronomy, Greek science, Age of Newton, rise of modern physics, scientific instruments, nationalism/internationalism in science, science and society, sociology of science, public conceptions of science, organization and profession of science. (Offered periodically.)

278A-B. Science in Twentieth-Century America
(4-4) BADASH

The atomic age—the background to the atomic bomb, its development, use, and postwar problems. (Offered periodically.)

279A-B. Seminar in Native American History
(4-4) PLANE

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 279B.

Research seminar on topics in the history of the indigenous peoples of North America.

280. Introduction to the Study of East Asian History
(4) ELLIOTT, FOGEL, PAI, ROBERTS

Introduction to the major methodological, historiographical, and theoretical issues faced by historians of East Asia. Required for students entering the M.A. or Ph.D. program in Chinese, Japanese, or Korean history.

281A-B. Sino-Japanese Cultural and Political Relations, 1850-1945
(4-4) FOGEL

Prerequisite: knowledge of Chinese and/or Japanese.

Same course as East Asian Cultural Studies 2B1A-B. Not open for credit to students who have completed History 2B9A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 2B1B.

Reading and research seminar on the interrelationship between Chinese and Japanese history from the first modern contacts until the end of World War II. Emphasis on cultural and political interactions.

281L. Japanese Sinology
(4) FOGEL

Prerequisite: minimum two years of Japanese.

Same course as East Asian Cultural Studies 2B1L.

Introduction to Japanese traditions of China studies; readings and discussions of various texts, and introduction to bibliographic tools.

282A-B. The Origins of Korean Civilization
(4-4) PAI

Prerequisite: consent of instructor.

May be repeated for credit in combination with History 287A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 2B2B.

Recommended preparation: reading knowledge of Korean or Japanese.

Examination of the rise of civilization in Korea in the context of the development of complex societies and states of China and Japan. Discussion of anthropological models of acculturation, adaptation, culture change, regional interaction and state formation.

283A-B. Research Seminar in Chinese Women's History
(4-4) JUDGE

Prerequisite: History 1BBA or 1B8B.

Reading and research seminar examining topics in Chinese gender history.

284A-B. Seminar in the History of Chinese Thought
(4-4) STAFF

Prerequisite: History 19 or 186A-B.

Not open for credit to students who have completed Chinese 2B4. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 2B4B.

Selected studies of leading thinkers on important schools of thought.

284S-T. Seminar in Premodern Chinese History
(4-4) STAFF

Prerequisite: History 201AS.

Not open for credit to students who have completed History 2B6A-B. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 2B4T.

Research on special topics on ancient, medieval, or early modern China.

285A-B. Seminar in Early Modern Chinese History
(4-4) ELLIOTT

Prerequisite: History 201AS.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 2B5B.

Recommended preparation: reading knowledge of modern and/or classical Chinese.

Research seminar on early modern Chinese history with training in bibliography and research methodology.

285L. Chinese Readings in History
(4) ELLIOTT
Prerequisites: intermediate ability in Chinese; consent of instructor.

Texts from both Taiwan and the Mainland are used to introduce essential vocabulary and basic modes of interpretation. For students interested in Chinese history who wish to acquire the skills to read secondary scholarship in the Chinese language.

287L. Japanese Readings in History
(4) ROBERTS
Prerequisites: intermediate Japanese ability; consent of instructor.

A course for students in Japanese history who want to learn to read secondary works in the Japanese language. Brief texts introduce the essential vocabulary and language patterns in Japanese historiography.

288A-B. Seminar in Japanese History
(4-4) ROBERTS
Prerequisite: consent of instructor.

A two-quarter research seminar on selected problems in Japanese history. Some working knowledge of the Japanese language desirable but not necessary.

289M. Readings in Manchu
(4) ELLIOTT
Prerequisite: consent of instructor.
Same course as Chinese 289M.

One of the Altaic languages, Manchu was widely employed throughout China during the Qing dynasty. The course introduces the Manchu script, grammar, and transcription, and trains students in reading and translating Manchu texts from the seventeenth and nineteenth centuries.

290. US-Soviet Relations in the Cold War
(4) HASEGAWA, LOGEVALL
Prerequisite: open to graduate students in history and political science.

A one-quarter reading seminar discussing basic issues of US-Soviet relations during the Cold War, as well as historiographical issues. A number of specialists from outside the class will make presentations.

291A-B. Seminar on Knowledge and Policy, Institutions and Power
(4-4) FURNER
A two-quarter in-progress sequence course with grades for both quarters issued upon completion of History 291B.

A two quarter seminar for historical research on the cultural and political power of ideas, formulated as policy relevant knowledge within specific institutional contexts in the history of the modern and civil society.

292A. Foundations of U.S. History to 1846
(4) STAFF

A colloquium introducing the important issues, themes, and literature in the history of the United States, from colonial origins to 1846. Historiographical in nature, the course assumes a basic familiarity with the period.

292B. Foundations of U.S. History, 1846-1917
(4) STAFF

A colloquium introducing the important issues, themes and literature in the history of the United States, from 1846 to 1917. Historiographical in nature the course assumes a basic familiarity with the period.

292C. Foundations of U.S. History, 1917-Present
(4) STAFF

A colloquium introducing the important issues, themes, and literature in the history of the United States, from 1917 to the present. Historiographical in nature, the course assumes a basic familiarity with the period.

500. Laboratory for Teaching Assistants
(2-4) STAFF
Units do not apply toward completion of the Ph.D. requirement. Required each quarter for teaching assistants.

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants.

501. The Art of Teaching History
(2-4) STAFF
Prerequisites: graduate standing; admission to Ph.D. program or M.A. destined for postsecondary teaching.
Units do not apply toward completion of graduate degree.

A seminar course on the art and methods of teaching history including practical experience in the classroom. Audiovisual aids will be used in evaluating teaching techniques. Graduate students who wish to become teaching assistants are strongly advised to take this course.

502. Research Practicum
(2-4) STAFF
Units do not apply toward completion of graduate degree.

Directed research in history for research assistants, etc.

503. Tools of Historical Research
(2-4) STAFF
Units do not apply toward completion of graduate degree.

Auxiliaries to the study of history including paleography, computer languages, computer editing, foreign language, archival techniques, statistics, textual criticism, bibliographical tools, and other related techniques.

594AA-ZZ. Special Topics
(4) STAFF
May be repeated for credit.

Special seminar on research subjects of current interest.

HS. Colloquium in the History of Science: Badash; Osborne; Guerrini

596. Directed Reading and Research
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.
Minimum of 2 units per quarter.

Individual tutorial. Instructor usually student's major professor. Each faculty member has a unique letter designation available from graduate secretary.

597. Independent Study for Master's Comprehensive Examinations and Ph.D. Examinations
(2-12) STAFF

No unit credit allowed toward advanced degree.

599AA-ZZ. Ph.D. Dissertation Preparation
(2-12) STAFF
Prerequisites: graduate standing and consent of instructor.

Only for writing the dissertation. Instructor should be the chair of the student's doctoral committee. Each faculty member has a unique letter designation available from graduate secretary.

History of Art and Architecture

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Department Chair: Ann Bermingham

Faculty

Ann Jensen Adams, Ph.D., Harvard University, Associate Professor (17th-century art and architecture)

C. Edson Armi, Ph.D., Columbia University, Professor (medieval architecture)

Larry M. Ayres, Ph.D., Harvard University, Professor (medieval art)

Ann Bermingham, Ph.D., Harvard University, Professor (18th- and 19th-century British art and culture, critical theory and feminist theory)

Swati Chattopadhyay, Ph.D., UC Berkeley, Assistant Professor (modern architecture, cultural landscape of British colonialism, postcolonial theory)

Ramon Favela, Ph.D., University of Texas at Austin, Associate Professor (modern Latin American art, contemporary Chicano art)

Ulrich F. Keller, Ph.D., University of Munich, Professor (history of photography)

Nuha N. N. Khoury, Ph.D., Harvard University, Assistant Professor (Islamic art and architecture)

Rainer Mack, Ph.D., UC Berkeley, Assistant Professor (ancient Mediterranean; Greek)

Mark Meadow, Ph.D., UC Berkeley, Assistant Professor (15th- and 16th-century Northern European)

Laurie Monahan, Ph.D., Harvard University, Assistant Professor (20th-century and contemporary European art)

Jeanette Favrot Peterson, Ph.D., UC Los Angeles, Associate Professor (pre-Columbian/Colonial)

E. B. Robertson, Ph.D., Yale University, Professor (18th- and 19th-century British and American art)

Abigail Solomon-Godeau, Ph.D., Graduate Center, C.U.N.Y., Professor, (contemporary art, feminist and critical theory, 19th-century European art, photography)

Peter C. Sturman, Ph.D., Yale University, Associate Professor (Chinese art)

Robert Williams, Ph.D., Princeton University, Associate Professor (art theory, historiography, Italian Renaissance)

Fikret K. Yegül, Ph.D., Harvard University, Professor (Greek and Roman art, architectural history)

Emeriti Faculty

Herbert M. Cole, Ph.D., Columbia University, Professor Emeritus (African, Oceanic, North American Indian art, architecture)

Mario A. Del Chiaro, Ph.D., UC Berkeley, Professor Emeritus (ancient art, Egyptian, Greek, and Etruscan art)

Henri Dorra, Ph.D., Harvard University, Professor Emeritus (19th- and 20th-century European art)

Beatrice Farwell, Ph.D., UC Los Angeles, Professor Emerita (19th-century art)

Peter T. Meller, Ph.D., Budapest University, Professor Emeritus (renaissance art)

Alfred K. Moir, Ph.D., Harvard University, Professor Emeritus (baroque art)

Prudence R. Myer, Ph.D., Radcliffe College, Professor Emerita (art of India)

Corlette R. Walker, Ph.D., Bryn Mawr, Lecturer Emerita (British and American art)

Affiliated Faculty

Constance Penley, Ph.D. (Film Studies)

Sven Spieker, Ph.D. (Germanic, Slavic, and Semitic Studies)

Adjunct Faculty

Marla Berns, Ph.D., (UCSB Art Museum)

Elizabeth Brown, Ph.D., (UCSB Art Museum)

The Department of the History of Art and Architecture offers an undergraduate program directed toward a B.A. degree and a graduate program leading to the M.A. and Ph.D. degrees. The undergraduate program is designed to provide an understanding of the history and significance of the visual arts. It also prepares students for graduate work leading to careers as academic historians of art, museum curators, or critics, and in other fields such as art administration, historic preservation, and gallery work. The program is supported by an excellent arts library, visual resources collection, architectural drawing collection, and university art museum.

Students with a bachelor's degree in art history who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

The department publishes a list that describes the content of courses offered each quarter; the publication is available prior to registration in classes. Advising is available in the department through the undergraduate advisor, faculty undergraduate advisor, and the department chair.

Honors Program

The departmental honors program is designed for students interested in advanced research in art history. Students must receive the signatures of the department chair and a faculty supervisor, in addition to having an overall grade-point average of at least 3.0, 12 upper-division units in the major, and a major grade-point average of at least 3.5.

Once admitted to the program, honors students may choose between two options leading to the completion of an honors thesis: (1) one two-quarter seminar, or two seminars in relevant areas within art history or (2) two consecutive quarters of independent study (Art History 199). Alternative options must be approved by the department chair. After projects are completed and submitted, they are evaluated by a committee consisting of the student's faculty supervisor and at least one other departmental faculty member, usually a specialist in a neighboring field. Among the criteria used in evaluating honors theses are scholarly presentation, originality, and quality of research. Deadline for the thesis is the Monday of the eighth week of the second quarter of honors studies. Students successfully completing the honors project will receive Distinction in the Major at the time of graduation.

Undergraduate Program

Bachelor of Arts—Art History

Preparation for the major. Twelve units from Art History 6A-B-C-D-E-F-G-H-I-J-K-L, 7A, 50, 67H.

Students planning graduate training in art history are advised to develop a reading knowledge of German, French, or Italian.

Upper-division major. Forty-eight upper-division units are required. Four courses in art history of which one course must be from four of the five period divisions: (1) Ancient (101 series, 102 series, 103 series, 104 series, 186A-B), (2) Medieval (105 series, 106 series, 186C-D), (3) Renaissance/Baroque (107 series, 108 series, 109 series, 110 series, 111 series, 112 series, 113 series, 114 series, 115 series, 116 series, 186E-F-G-H-I), (4) Modern pre-1900 (117 series, 118 series, 121A, 136A, 138A, 186J), (5) Modern Post 1900 (119 series, 120 series, 121B-C, 123 series, 125B, 136B, 136E, 138E, 144A-B-C, 186K); two undergraduate courses in non-Western art history (may include African, Native-American, Pre-Columbian/Colonial, Islamic, Asian—121F-G, 127 series, 128 series, 129A, 130 series, 131 series, 132 series, 133 series, 134 series, 135 series, 140C, 186N-P-Q-R); four upper-division elective courses in art history; two upper-division courses from the following disciplines: art studio; classics; comparative literature; dance; dramatic art; East Asian languages and literature; English; film studies; French and Italian; Germanic, Slavic, and Semitic studies; history; music; philosophy; Spanish and Portuguese; and religious studies.

Note: Students who wish to focus on a particular area, civilization, or branch of art history (i.e., ancient, architecture, or modern) are encouraged to speak to departmental advisors or faculty. For those eligible, the focus may also include an undergraduate honors project.

Bachelor of Arts—Art History—Non-Western Emphasis

Preparation for the major. Four units from Art History 6D-E-H-K, 8 units in art history from 6A-B-C-F-G-I-L, 7A, 50, 67H, or courses not used above.

Students planning graduate training in art history are advised to develop a reading knowledge of German, French, Italian, or a language related to their non-Western area of emphasis.

Fikret Yegul

PROFESSOR, HISTORY OF ART AND ARCHITECTURE

Professor Fikret Yegul, a specialist in ancient Greek and Roman art, was a successful architect when he made a career change and became a scholar of art history and architecture. Although he enjoyed practicing his craft, he found the business somewhat restrictive, because he wanted to travel the world to explore its art and architecture. The academic life would afford him that opportunity.

"It's an exciting period in the life of a young person. You can have a great impact."

"When you teach architecture rather than do it, you are still very much a part of the field," Yegul said. "The input of the young people keeps me more excited and vibrant about issues than being part of a business organization would."

Yegul takes great pleasure in teaching undergraduate courses in art and architecture because, as he said, "it's an exciting period in the life of a young person. You can have a great impact." He hopes his classes give students a greater understanding and a more tolerant view of the world's history and cultures.

Upper-division major. Forty-eight upper-division units are required. Four courses in art history: one course from Pre-Modern, Ancient to Baroque (101 series, 102 series, 103 series, 104 series, 105 series, 106 series, 107 series, 108 series, 109 series, 110 series, 111 series, 112 series, 113 series, 114 series, 115 series, 116 series, 186A-B-C-D-E-F-G-H-I), one course from Modern, 1750 to present (117 series, 118 series, 119 series, 120 series, 121A-B-C, 123 series, 125B, 136A-B-E, 138A-E, 144A-B-C, 186J-K); six undergraduate courses in non-Western art history (may include African, native-American, Pre-Columbian/Colonial, Islamic, Asian—121F-G, 127 series, 128 series, 129A, 130 series, 131 series, 132 series, 133 series, 134 series, 135 series, 140C, 186N-P-Q-R), two additional undergraduate art history courses not used above; two undergraduate elective courses in art history; two undergraduate courses from the following disciplines: art studio; classics; comparative literature; dance; dramatic art; East Asian languages and literature; English; film studies; French and Italian; Germanic, Slavic, and Semitic studies; history; music; philosophy; Spanish and Portuguese; and religious studies.

Note: Students who wish to focus on a particular area, civilization, or branch of art history (i.e., African, Pre-Columbian, or Asian) are encouraged to speak to departmental advisors or faculty. For those eligible, the focus may also include an undergraduate honors project.

Minor—Art History

All courses to be applied to the minor must be completed on a letter-grade basis, including courses offered both by the Department of the History of Art and Architecture and those offered by other departments and applied to the minor.

Preparation for the minor. Eight lower-division units in art history (excluding Art History 1).

Upper-division minor. Twenty upper-division units in art history. Students wishing to develop a concentration in a particular area should consult the faculty undergraduate advisor.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

The department offers both M.A. and Ph.D. degrees, accepting applicants with a B.A. into the M.A./Ph.D. program, and those with a M.A. into the Ph.D. program. The department does not offer a terminal M.A. degree, and students who are interested only in pursuing the M.A. degree are not accepted.

Admission

The department seeks applicants with a demonstrated potential for outstanding creative research and a clear sense of intellectual and professional direction. A B.A. in the history of art is not essential for admission to the M.A./Ph.D. program, but applicants should have serious training in some branch of the humanities or social sciences. Applicants to the Ph.D. program must have completed an M.A. in the history of art.

In addition to departmental requirements for admission, applicants must also meet university requirements for admission described in the chapter "Graduate Education at UCSB." Applications for admission to the program must be received January 15. They must include university application forms, copies of all of the applicant's college and university transcripts, three letters of recommendation from appropriate academic or professional supervisors, Graduate Record Examination (GRE) scores, a statement of purpose explaining reasons for wanting to pursue graduate work at UCSB, and a sample of written work indicative of scholarly interests and skills (applicants to the Ph.D. program are expected to submit a copy of their thesis). Applicants for fellowships and teaching assistantships must also be received by January 15.

Although students in the M.A./Ph.D. program are expected to pursue the Ph.D., continuation into the Ph.D. program is not automatic. Entry into the Ph.D. program from the M.A./Ph.D. program requires that the student have completed M.A. work with honors; a brief letter of application must be submitted as well as at least two letters of endorsement from ladder faculty in the department, one of whom must indicate a willingness to supervise the applicant's Ph.D. work. The application and faculty letters must be received at the time that the M.A. thesis is completed. The graduate committee will review each request in consultation with the student's named potential advisor and make a recommendation to the entire faculty regarding admission.

Degree Requirements

Departmental degree requirements supplement those established by the university, described the in the section "Graduate Education at UCSB." Our principle aim has been to preserve a maximum flexibility, allowing students the opportunity to craft courses of study suited to their particular interests and needs. Ph.D. students, for instance, have the option of adding an emphasis in women's studies (the guidelines are described in the women's studies section for the catalog).

Master of Arts—Art History

Students have two options: option one (thesis) requires a minimum of 32 units of coursework (normally eight courses) for a letter grade plus a thesis; option two requires a minimum of 36 units (nine courses) plus a comprehensive examination. Students are expected to complete the M.A. within six quarters or two years.

Students are required to take the two-term proseminar in art-historical methods (Art History 200A-B) and a total of four graduate seminars (16 units) in at least three of the following four fields: Western Art to 1750, Modern Art, Non-Western Art, Architecture. Remaining units can be taken in the form of additional seminars upper-division undergraduate lecture courses (which graduate students take under the course number 295 or 596) or independent research; 8 of these units (two courses) may be taken outside the department.

By the beginning of the second year of residence, students must have demonstrated an ability to read one foreign language necessary for art-historical research (normally French, German, or Italian). They do so either by passing an exam administered by the department or by completing an approved university course (either three quarters of a standard language course, or a course designed for graduate students) maintaining at least a B average.

Doctor of Philosophy—Art History

The Ph.D. requires a minimum of 28 units (normally seven courses) in graduate coursework, 20 of which (five courses) must be seminar units; these must be completed by the end of the second year of residency. Before advancement to candidacy, the student must demonstrate an ability to read two foreign languages. Students are required to take the proseminar in art historical methodology and theory (Art History 200A-B). Advancement to candidacy takes place when the student passes individualized examinations in the area of specialty (major field) and a second (minor) field, and when, shortly after the completion of the exams, a formal dissertation proposal is approved by a faculty committee. The committee will be composed of at least two members of the UCSB Academic Senate in the Department of History of Art and Architecture, one of whom will be the chair. The third member may be a ladder faculty member from the department, another UCSB department, or another UC campus. Advancement to candidacy is expected to take place in the third year. The degree is awarded upon approval of the completed dissertation.

History of Art and Architecture Courses

LOWER DIVISION

Freshman seminars are offered on an irregular basis.

1. Introduction to Art
(4) STAFF
Not open to art history majors.
A study of art as a medium of expression.

6A. Art Survey I: Ancient-Medieval Art
(4) STAFF
History of Western art from its origins to the beginnings of the Renaissance. (F)

6B. Art Survey II: Renaissance-Baroque Art
(4) STAFF
Renaissance and Baroque art in northern and southern Europe. (W)

6C. Art Survey III: Modern-Contemporary Art
(4) STAFF
History of Western art from the eighteenth century to the present. (S)

6D. Survey: Asian Art
(4) STURMAN
The arts of India, China, and Japan.

6E. Survey: Arts of Africa, Oceania, and Native North America
(4) COLE
A conceptual, cross-cultural introduction to Amerind, Eskimo, African, and Oceanic arts: artists, sculpture, festivals, body decoration, masking, architecture, and painting will be seen in the context

of social and religious values. Films, slides, and museum tours.

6F. Survey: Architecture and Planning
(4) YEGÜL

A selective chronological survey of architecture and urban design in social and historical context. Individual buildings and urban plans from the past to the present will be used as examples.

6G. Survey: History of Photography
(4) KELLER

A critical survey of nineteenth- and twentieth-century photography as an art form.

6H. Pre-Columbian Art
(4) PETERSON

An introduction to selected art traditions in ancient Mesoamerican and Andean South America. Examination of major monuments of sculpture, architecture, ceramics, and painting for their meaning and function within socio-political, religious, and economic contexts.

6I. A History of Latin American Art and Architecture
(4) FAVELA

Major monuments of new Spanish-Portuguese art and architecture in the New World, sixteenth century to the present. Emphasis on postconquest mixtures of European and indigenous styles during the colonial period and major developments in modern Latin American art since independence.

6K. Islamic Art and Architecture
(4) N. KHOURY

A survey of Islamic art and architecture

6L. The Art of Christianity: the Genesis of Medieval Art and Architecture
(4) STAFF

From the Early Christian Period to the Age of the Gothic Cathedrals. This course investigates the creation of the artistic traditions to serve Christian aims and functions, including responses to issues of doctrine and relationships to non-Christian sources.

50. Women, Agency, and Culture
(4) STAFF

Not open for credit to students who have completed Women's Studies 50.

Exploration of the interventions women artists have made in the definition, exhibition, and production of art; the role of women as producers of visual culture and their struggles to define a place for themselves as artists. Examination of the contributions of women artists in the light of the institutional obstacles they have had to overcome.

UPPER DIVISION

101A. Archaic Greek Art (750 to 480 B.C.E.)
(4) MACK

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152E.

Painting, sculpture, and architecture in Greece from c750 to c480 B.C.E. considered in their social and cultural contexts. Emphasis on the emergence of representational practices during a time of social formation.

101B. Classical Greek Art (480 to 320 B.C.E.)
(4) MACK

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152F.

Painting, sculpture, and architecture in Greece from c480 to c320 B.C.E. considered in their social and cultural contexts. Emphasis on fifth-century Athens.

101C. Hellenistic Greek Art
(4) MACK

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152F.

Painting, sculpture, and architecture in Greece from 336 to 30 B.C.E. considered in their social and cultural contexts. Emphasis on relations between Greek and other cultures of the ancient Mediterranean after Alexander and during the rise of Rome.

101D. Ancient Egyptian Art
(4) MACK

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152A.

Painting and sculpture in Egypt from the fourth millenium to the first century B.C.E. Emphasis on the relations between visual representation and religious and political practice, including special attention to the formation and maintenance of the canonical tradition.

101E. Tel Dor Archaeological Field School
(8) RAINER

Introduction to archaeological excavation technique, artifact analysis, and the archaeology of the Levant (Middle Bronze Age to Late Imperial Roman). Students participate in six-week summer excavation season at Tel Dor, Israel, including lectures on the history and archaeology of the Levant, practica in archaeological method, and field trips to archaeological sites and museums in Israel.

102AA-ZZ. Special Topics in Ancient Art
(4) MACK

Prerequisite: not open to freshman.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Specialized classes exploring critical issues in ancient art.

103A. Roman Architecture
(4) YEGÜL

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152K.

Recommended preparation: Art History 6A.

The architecture and urban image of Rome and the Empire from the Republic through the Constantinian era.

103B. Roman Art: From the Republic to the Empire (509 B.C. to A.D. 337)
(4) YEGÜL

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152I.

Recommended preparation: Art History 6A.

Painting, sculpture, and decorative arts of the Romans from the Republic to the Empire, from Romulus to Constantine. Social, economic, and cultural background emphasized.

103C. Greek Architecture
(4) YEGÜL

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 152J.

The architecture of the Greek world from the archaic period through the Hellenistic Age.

104AA-ZZ. Special Topics in Classical Art and Architecture
(4) STAFF

Prerequisite: not open to freshman.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Recommended preparation: Art History 6A.

Special topics in classical art and architecture.

A. Late Roman and Byzantine Architecture: Yegül

105A. Medieval Art: Early
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153A.

Architecture, sculpture, painting, and the minor arts of the early Middle Ages in Western Europe from the fourth to the eleventh century.

105B. Medieval Art: Byzantine
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153B.

Architecture, sculpture, painting, and the minor arts of the Byzantine world from 330 to 1453 A.D.

105C. Medieval Architecture: From Constantine to Charlemagne
(4) ARMI

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153L.

A survey of the architecture in Italy, France, Spain, Germany, and England from the Early Christian through the Carolingian periods.

105D. Carolingian and Ottonian Art
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153H.

Art and architecture of Western Europe associated with the patronage of ruling dynasties in the ninth, tenth, and eleventh centuries. Artistic developments from the reign of Charlemagne to Henry III.

105E. The Origins of Romanesque Architecture
(4) ARMI

Prerequisites: Art History 105C or 105G; upper-division standing.

Not open for credit to students who have completed Art History 153M.

Eleventh century architecture in France, Italy, Spain, Germany, and England.

105F. Medieval Art: Romanesque
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153C.

Architecture, sculpture, and painting of the Romanesque period in Western Europe from 1050 to 1200 A.D.

105G. Late Romanesque and Gothic Architecture
(4) ARMI

Prerequisites: Art History 6A or 105C or 105E; upper-division standing.

Not open for credit to students who have completed Art History 153N.

Twelfth- and thirteenth-century architecture in France, Italy, Spain, Germany, and England.

105H. Medieval Art: Gothic
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153D.

Architecture, sculpture, and painting of the Gothic period in Western Europe from 1150 to 1400 A.D.

105I. Medieval Art: Gothic Architecture
(4) ARMI

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153J.

A survey of medieval European architecture from the beginning of the Gothic to the beginning of the Renaissance (A.D. 1150-1500), concentrating on buildings in France, England, and Germany.

105J. Gothic Painting 1200-1400
(4) AYRES

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153F.

The origins and development of Gothic painting in France, England, and the Lower Rhineland with special reference to Parisian manuscript illumination and to the influence of Italian art in the north during the fourteenth century.

105K. Medieval Art: Italy, Thirteenth and Fourteenth Centuries
(4) ARMI

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 153E.

The emergence of humanistic and civic ideas in the art of the Italian trecento and quattrocento. A survey of large civic programs of secular and secularized ecclesiastical art of the two centuries.

Sculpture, architecture, and painting will be discussed.

105L. Art and Society in Late-Medieval Tuscany
(4) WILLIAMS

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 153K.

The dramatic developments in central-Italian art from the eleventh to the fourteenth centuries are presented against a historical background: emergent capitalism, the gradual replacement of feudal authority with representative governments, popular religious movements and the first stirrings of humanism.

105M The Design, Construction, and Structure of Medieval Architecture
(4) ARMI

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 153O.

The practical aspects of creating High Medieval Churches.

105N. Rome in the Middle Ages
(4) AYRES

Prerequisite: not open to freshman.

Not open for credit to students who have completed Art History 153P.

Medieval art and architecture in Rome, from Late Antiquity to the Renaissance.

106AA-ZZ. Special Topics in Medieval Art
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in medieval art.

107A. Painting in the Fifteenth-Century Netherlands
(4) MEADOW

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 155B.

Netherlandish painting from c1400-c1500 examined in its social, religious, and cultural contexts. Van Eyck, Rogier, Bouts and Memling, among others.

107B. Painting in the Sixteenth-Century Netherlands
(4) MEADOW

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 156B.

Painting of the Low Countries from c1500-c1600, placed in its social and cultural contexts. Artists studied include Bosch and Bruegel.

107C. German Art of the Early Modern Period
(4) MEADOW

Prerequisite: not open to freshmen.

Painting, sculpture and graphic arts of the German territories, c1400-c1600, studied in relation to the political and religious events of the period. Durer, Cranach, Baldung, and Grunewald, among other artists. Special attention to the events of the Reformation.

107D. The Birth of Prints and Print Culture in Europe
(4) MEADOW

Prerequisite: not open to freshmen.

The uses and effects of printed images studied in the context of the Print Revolution of the fifteenth and sixteenth centuries. Topics include the relationship of printing to the Reformation, to the origins of propaganda and to changes in conceptual frameworks.

108AA-ZZ. Special Topics in Fifteenth and Sixteenth Century Northern European Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Specialized classes exploring critical issues in European art from the Netherlands, Germany, France and/or England. Courses may take the form of in-depth studies of particular artists (e.g. Durer) or themes (e.g. Iconoclasm).

109A. Italian Renaissance Art: 1400 to 1500
(4) WILLIAMS

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 155C.

Developments in painting and sculpture, with attention to issues of technique, iconography, patronage, workshop culture and theory.

109B. Italian Renaissance Art: 1500 to 1600
(4) WILLIAMS

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 156A.

Developments in painting and sculpture, with attention to issues of technique, iconography, patronage, workshop culture and theory.

109C. Art as Technique, Labor, and Idea in Renaissance Italy.
(4) WILLIAMS

Prerequisite: not open to freshmen.

An approach to the art of Renaissance Italy that focuses on the superimposition of three complementary and often competitive discursive formations that condition its practice and historical development.

109D. Art and Formation of Social Subjects in Early Modern Italy
(4) WILLIAMS

Prerequisite: not open to freshmen.

An approach to the art of Renaissance Italy that focuses on the viewer's experience and the social and cultural conditions framing it.

109E. Michelangelo
(4) WILLIAMS

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 156E.

The career and achievement of the artist, with particular attention to issues surrounding his treatment of the human body.

109F. Italian Journeys
(4) WILLIAMS

Prerequisite: not open to freshmen.

A historical survey of travel to Italy and its importance as one of the constitutive rituals of western culture, drawing upon literature, the visual arts, and film, and ending with practical advice for those planning to make the trip themselves.

110AA-ZZ. Special Topics in Italian Renaissance Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Italian Renaissance art.

111A. Seventeenth Century Visual Culture in Northern Europe
(4) ADAMS

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 157C.

Visual culture in northern Europe between c1600 and 1700. Examination of the cultural function of imagery produced in Holland, Flanders, England, France, and/or Germany, from the perspective of material culture, seventeenth-century beliefs, and twentieth-century approaches.

111B. Dutch Art of the Seventeenth Century I
(4) ADAMS

Prerequisite: a prior course in art history; not open to freshmen.

Visual culture produced in Northern Netherlands between 1579 and 1648. Classes devoted to individual artists (e.g. Rembrandt, Frans Hals, Johannes Vermeer) and genres (e.g. landscape, portraiture, history painting) in relation to material culture and thought of the period.

111C. Dutch Art of the Seventeenth Century II
(4) ADAMS

Prerequisites: a prior course in art history; not open to freshmen.

Recommended preparation: Art History 111B.

Visual culture produced in Northern Netherlands between 1648 and 1700. Classes devoted to individual artists (e.g. Rembrandt, Frans Hals, Johannes Vermeer) and genres (e.g. landscape, portraiture, history painting) in relation to material culture and thought of the period.

111D. Flemish Art of the Seventeenth Century
(4) ADAMS

Prerequisites: a prior course in art history; not open to freshmen.

Visual culture produced by Flemish artists between 1579 and 1700. Classes may be devoted to individual artists, genres and/or patrons in relation to the Counter-Reformation, changing patronage, material culture and seventeenth century thought. Particular attention paid to the variety of approaches employed by later scholars of the period.

111E. Gender and Power in Sixteenth and Seventeenth Century European Art
(4) ADAMS

Prerequisites: a prior course in art history; not open to freshmen.

Focus on the construction of gender identity and the cultural function of gendered subjects in sixteenth and seventeenth century European imagery.

111F. Rethinking Rembrandt
(4) ADAMS

Prerequisites: a prior course in art history; not open to freshmen.

Not open for credit to students who have completed Art History 157F.

In light of recent reevaluations of Rembrandt's biography and his oeuvre, this course examines questions of authenticity and authorship in light of artistic technique, subject matter, style, and patronage.

112AA-ZZ. Special Topics in Northern European Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Specialized classes that examine critical issues in Northern European visual culture of the seventeenth century. Courses may consider individual artists (e.g. Frans Hals, Vermeer) and/or subject genres (e.g. still-life, history painting, portraiture) in relation to the cultural function of northern European imagery from the time of production until today.

113A. Seventeenth Century Art in Southern Europe
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 157A.

Painting and sculpture from Italy and Spain as well as France and Flanders examined in its cultural, political, and religious contexts with particular attention to relationships between regional traditions and international trends. Artists studied include Caravaggio, Bernini, Velazquez, Poussin, and Rubens.

113B. Seventeenth Century Art in Italy I
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 157B.

Italian painting, sculpture, architecture, and urbanism from the late sixteenth- to late seventeenth-centuries examined in its cultural, political, and religious contexts, with emphasis on the relationship between the arts. Focus on the earlier seventeenth-century, including the work of Caravaggio, Carracci, and the young Bernini.

113C. Seventeenth Century Art in Italy II
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have

completed Art History 157B. Art History 113B recommended.

Italian painting, sculpture, architecture, and urbanism from the late sixteenth- to late seventeenth-centuries examined in its cultural, political, and religious contexts, with an emphasis on the relationship between the arts. Covers the late work of Bernini, as well as the art and architecture of Cortona and Borromini, among others.

113D. Architecture in Early Modern Italy
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 157E.

Architecture and urbanism in Italy from the Renaissance through the seventeenth-century examined in its cultural, political, and religious contexts, with emphasis on relationships to classical tradition. Includes works and/or writings by Brunelleschi, Alberti, Bramante, Michelangelo, Bernini, and Borromini.

114AA-ZZ. Special Topics in Seventeenth Century Southern European Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Southern European art.

115A. Eighteenth Century Art: 1685 to 1750
(4) BERMINGHAM

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 158A.

Painting, sculpture, and architecture in Europe. Topics will change, but may include art and court culture, the Rococo, the rise of popular art and media.

115B. Eighteenth Century Art: 1750 to 1810
(4) BERMINGHAM

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 158B.

Painting, sculpture, and architecture in Europe from 1750 to 1810. Topics will change but may include art and the French Revolution and neoclassicism.

115C. Eighteenth Century British Art and Culture
(4) BERMINGHAM

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 158C.

An interdisciplinary study of British art and culture in the eighteenth century. Topics may include: the art market and art public; portraiture and autobiography; images of the family; landscape gardening and poetry; sentimentalism; the Royal Academy and the ordering of the arts.

116AA-ZZ. Special Topics In Eighteenth Century Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in eighteenth century art.

117A. Nineteenth-Century Art: 1800-1848
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159A.

Painting, sculpture, and architecture in Europe. Topics will change, but may include art under Napoleon and Romanticism.

117B. Nineteenth-Century Art: 1848-1900
(4) BERMINGHAM, MONAHAN, SOLOMON-GOOEAU

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159AB.

Painting, sculpture, and architecture in Europe. Topics will change, but may include art and the Industrial Revolution, Impressionism, and Post-Impressionism.

117C. Nineteenth-Century British Art and Culture
(4) BERMINGHAM

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159H.

An interdisciplinary study of British art and culture in the nineteenth century. Topics may include: romantic landscape painting and poetry; art and the industrial revolution; London and Victorian images of the city; images of childhood; romanticism in Britain; and more.

117D. Nineteenth-Century French Art 1800 to 1900
(4) BERMINGHAM, MONAHAN, SOLOMON-GOOEAU

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159E.

Leading painters from Ingres through Manet; the Academy; the rise of new graphic techniques and photography as art media and as popular imagery; interrelations of high and popular culture.

117E. Romanticism to Symbolism: Nineteenth-Century German Art
(4) KELLER

Prerequisite: not open to freshmen.

A survey of the major art movements in nineteenth-century Germany, including Romanticism, Realism, Impressionism, art nouveau, and symbolism. Special emphasis given to the historical and cultural context of German art, and its interaction with the international art scene.

118AA-ZZ. Special Topics in Nineteenth-Century Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in nineteenth century art.

119A. Art in the Modern World
(4) FAVELA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 150.

An examination of art of the last 100 years. Treats painting, architecture, and sculpture in a manner that emphasizes the social, economic, and cultural background.

119B. Contemporary Art
(4) MONAHAN, SOLOMON-GOOEAU

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 161P.

Study of recent artistic developments, from pop to contemporary movements in painting, sculpture, and photography. Movements studied include minimal art, postminimalism, process art, conceptual art, earthworks, pluralism, neoexpressionism, and issues of postmodern art and criticism.

119C. Expressionism to New Objectivity: Early Twentieth Century German Art
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159F.

A survey of modernist art movements in Germany, beginning with the Expressionist phase around 1905 and concluding with the Bauhaus and New Objectivity phase up to 1933. Special emphasis on the historical and cultural context of German art, and its interaction with the international art scene.

119D. Art in the Post-Modern World
(4) FAVELA

Prerequisite: upper-division standing.

An examination of the concepts of "Post-Modernism" in Euro-American visual arts, including painting, sculpture, architecture, graphic arts, and new experimental genres from the 1970's to the present.

119E. Art of the Post-War Period, 1945-1968
(4) MONAHAN

Prerequisite: not open to freshmen.

Examines the major artistic developments in Europe and the U.S. following Word War II through 1968. Addresses concepts and critiques of modernism as they emerged in movements such as Abstract Expressionism, Pop Art, Performance and Feminism art.

119F. Art in the Post-Modern World
(4) FAVELA

Prerequisite: upper-division standing.

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120AA-ZZ. Special Topics in Twentieth Century Modern Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in twentieth-century modern art

121A. American Art From Revolution to Civil War: 1700-1860
(4) ROBERTSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 161A.

Painting, sculpture, architecture and decorative arts in the original 13 colonies, through the formation of the United States, to the crisis of the Civil War. Particular attention paid to environmental and social issues.

121B. Reconstruction, Renaissance, and Realism in American Art: 1860-1900
(4) ROBERTSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 161A.

Painting and human-made environments from the onset of the Civil War to just before World War II, tracing the role of art in the rise of modern, corporate America.

121C. Twentieth-Century American Art: Modernism and Pluralism, 1900-Present
(4) ROBERTSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 161B.

American painting in the twentieth-century, from the advent of modernism to yesterday.

121D. African-American Art and the African Legacy
(4) COLE

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 167.

Examination of three centuries of African-American art in North America, the Caribbean, and Brazil, stressing the African Legacy. Colonial metalwork and pottery, folk or outsider genres, and mainstream nineteenth- and twentieth-century work are among traditions studied.

121E. American Things: Material Culture and Popular Art
(4) ROBERTSON

Prerequisite: not open to freshmen

America has one of the greatest consumer cultures in history. This course examines the range of objects produced, sold, and consumed in this country, from colonial times to the present, from silverware to plastic, and everything in between.

121F. History of Native Art and Architecture of North America
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 151D.

Survey of indigenous painting, sculpture, architecture, and other arts of North America as experienced through several major traditions. Principle emphasis on presentation of traditions as they developed and intermingled during the centuries before and through early years of European contact.

121G. North American Indian Arts in Context
(4) COLE

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 151E.

Survey of American Indian arts by regions: masks, figures, "totem poles," painting, architecture, beadwork, pottery, dress. Emphasis on art-in-context, values, and world views in the arts. Prehistoric traditions discussed but focus on more recent ethnographical data.

122AA-ZZ. Special Topics in Art of the Americas
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in art in the Americas.

123A. Modern Latin American Art
(4) FAVELA

Prerequisite: upper-division standing.

A survey of Modernism in Latin America from the 1850's to the 1950's. Examines the painting, sculpture, architecture and graphic arts of Latin American elites within their social-cultural contexts.

123B. Contemporary Latin American Art
(4) FAVELA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 161C.

Trends in Latin American painting, sculpture, and graphic arts 1960s-present: neofigurative and abstract movements in Mexico (Nueva Presencia) and Argentina (Otra Figuracion); development of Argentine and Venezuelan kinetic art; constructivist and figurative trends in Colombia. Particular attention to Latin American artists working in New York and Paris.

123C. Modern Art of Mexico
(4) FAVELA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 161E.

A general survey of the main developments of nineteenth- and early twentieth-century Mexican art in its social context. Particular attention is given to the Mexican mural renaissance and the works of Posada, Rivera, Siquieros, Orozco, Tamayo, and Frida Kahlo.

124AA-ZZ. Special Topics in Latin American Art
(4) FAVELA

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Latin American art.

A. Modern Art of Brazil
B. The Art of Cuba
C. Colonial Art of Latin America
D. Pop Art in Latin America
E. Colonial Art of Mexico
F. Contemporary Mexican Art
G. The Mexican Mural Movement
H. Mexican Photography
I. Latin American Photography
J. Art and Politics in Latin America
K. Popular Art in Mexico and Latin America
L. Diego Rivera and Frida Kahlo

125A. Chicano Art: Symbol and Meaning
(4) FAVELA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 145 or Chicano Studies 145.

This iconography course traces the sources and historical development of symbols and forms that originated in the art of New Spain and Mexico and became crucial for the development of a contemporary Chicano art. Emphasis given to artistic conceptions of America and Aztlan by Mexican, Mexican American, and Chicano artists.

125B. Contemporary Chicano and Chicana Art
(4) FAVELA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 146 or Chicano Studies 146.

Examination and appraisal of the Chicano art movement within the context of contemporary American art and the contemporary art of Mexico. A survey of major Chicano and Chicana artists and developments in Chicano painting, sculpture, graphic, and conceptual art from the late 1960's to the present.

126AA-ZZ. Special Topics in Chicano Art
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Chicano art.

127A. African Art I
(4) COLE

Prerequisites: Art History 6E; not open to freshmen.

Not open for credit to students who have completed Art History 151F.

The relationship of art to life in sub-Saharan Africa. A cross-cultural survey of types, styles, history, and values of arts ranging from personal decoration to the state festival, stressing Ashanti, Ife, Benin, Yoruba, Cameroon.

127B. African Art II
(4) COLE

Prerequisite: Art History 6E or 127A.

Not open to freshmen. Not open for credit to students who have completed Art History 151G.

An in-depth continuation of Art History 127A in a seminar/discussion format. Selected topics in masking, figural sculpture, etc., and emphasis on African contexts of ritual and social life.

128AA-ZZ. Special Topics in African Art
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in African art.

129A. Arts of the South Seas
(4) COLE

Prerequisites: Art History 6E;not open to freshmen.

Not open for credit to students who have completed Art History 151C.

An introduction to masking, sculpture, festivals, body decoration, and architecture of Melanesia, Micronesia, and Polynesia, stressing the relationship of art to life.

130A. Pre-Columbian Art of Mexico
(4) PETERSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 154C.

The art and architecture of selected cultures of northern Mesoamerican (non-Maya) from circa 1200 B.C. to the Conquest with an emphasis on iconographical and historical problems.

130B. Pre-Columbian Art of the Maya
(4) PETERSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 154D.

Exploration of the arts of Maya-speaking cultures in southern Mesoamerica using archeological, epigraphic, and ethnographic data to help reconstruct Maya religion and civilization.

130C. The Arts of Spain and New Spain
(4) PETERSON

Prerequisite: not open to freshmen.

Beginning with the Islamic, Medieval and Renaissance arts of Spain, this course will chart their influence and transformation in the sixteenth and seventeenth century arts of the New World. Special emphasis on the creative interaction of the European and indigenous traditions in colonial arts of the Americas.

130D. Pre-Columbian Art of South America
(4) PETERSON

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 154B.

The architecture, sculpture, ceramics, textiles, and metalwork of the Andean civilizations from 3000 B.C. to A.D. 1532 examined within their archaeological and cultural contexts.

131AA-ZZ. Special Topics in Pre-Columbian/Colonial Art
(4) PETERSON

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Pre-Columbian/Colonial art.

132A. Mediterranean Cities
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 175A.

An exploration of the most important medieval cities of the Mediterranean world, their urban forms, layout, architecture, and physical patterns. Venice, Cairo, and Baghdad will be among the cities discussed.

132B. The "Masterpiece" in Islamic Art and Architecture
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 175B.

Specific objects and buildings as a means toward exploring their types, media, and contextual problems. Objects include works on paper, ceramics, and metalware.

132C. Architecture and Ideology from Constantine to Suleyman the Magnificent
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 175C.

Byzantine and Islamic architecture.

132D. Islamic Architecture 650-1400
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 176A.

Islamic architecture between 650 and 1400 in its historical context.

132E. Islamic Architecture 1400-Modern
(4) KHOURY

Prerequisite: not open to freshmen. Not open for credit to students who have completed Art History 176B.

Islamic architecture, 1400-modern, in its historical context.

132F. Islamic Painting
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 176C. Survey at lower-division level recommended.

Islamic painting in its historical context.

132G. Monuments of Power
(4) KHOURY

Prerequisite: not open to freshmen.

Historical documents and contemporary interpretations are used to explore the ways in which messages of dominance and power were embedded into Islamic monuments from the seventh century to modern times. A comparative, cross-cultural approach focussing on the power of architectural monuments in relation to the power to create architectural monuments.

132H. Words and Images
(4) KHOURY

Prerequisite: not open to freshmen.

An exploration of the relationship between writing and figural representation in a variety of contexts and media in Islamic art. Focus on a number

of themes, including the use of words as images, figural and non-figural iconography, and representations of women in Islamic painting.

132I. Art of Empire: Safavid, Ottoman, and Mughal Material Culture
(4) KHOURY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 133AE.

Architecture and material culture of three roughly contemporary dynasties: the Ottomans, Safavids and Mughals who ruled areas roughly corresponding to present day Turkey, Iran, and India. Investigation of the imperial image as manifested in architecture and visual culture.

133AA-ZZ. Special Topics in Islamic Art
(4) KHOURY

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Islamic art.

134A. Buddhist Art
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 180.

A survey of select forms of Indian, Chinese, and Japanese Buddhist art with specific emphasis on Buddhist sculpture and Zen painting. Exploration of the correlation of religious values and art, as well as the transmission and adaptation of artistic traditions from one culture to another.

134B. Early Chinese Art
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 182A.

A survey of the art and archaeology of ancient China, from Neolithic times through the Tang dynasty (A.D. 618-906). Emphasis on the development and transformation of pictorial traditions, leading to early painting theory and practice.

134C. Chinese Painting
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 182B.

Chinese painting and theory, from the tenth through the eighteenth centuries. Introduction to major schools and masters in their cultural context. Problems of appreciation and connoisseurship.

134D. Art and Modernism in China
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 182BB.

An exploration of trends and issues in nineteenth and twentieth century Chinese art, as China awakens to and responds to the challenges of modernity and The West. Topics include the continuity of tradition, the exile identity, and trends after Tiananmen (1989).

134E. The Art of the Chinese Landscape
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 182C.

Chinese approaches to landscape as subject matter in art, with a focus on painting and garden architecture. The course begins with the immortality cult in the Han dynasty (206 B.C.-A.D. 221) and ends with contemporary artists of the twentieth century.

134F. The Art of Japan
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 183A.

Native traditions and foreign influences in the development of Japanese architecture, sculpture, painting, and minor arts.

134G. Japanese Painting
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 183B.

The changing and entwined traditions of Japanese painting: those rooted in native concepts and practices, and those from China.

134H. Ukiyo-e: Pictures of the Floating World
(4) STURMAN

Prerequisites: Art History 6D; not open to freshmen.

Not open for credit to students who have completed Art History 183C.

Japanese paintings and wood-block prints of the sixteenth through twentieth centuries, with emphasis on cultural perspectives and Japanese popular culture.

135AA-ZZ. Special Topics in Asian Art
(4) STAFF

Prerequisites: not open to freshmen; consent of instructor.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in Asian art.

136A. Nineteenth-Century Architecture
(4) CHATTOPADHYAY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159C.

The history of architecture and planning beginning with eighteenth-century architectural trends in Europe and concluding with late-nineteenth century efforts to reform the city. Exploration of the culture of nineteenth-century modernity through architecture and urban design, centered around the themes of industrialization, colonialism, and the idea of landscape. The scope is global.

136B. Twentieth-Century Architecture
(4) CHATTOPADHYAY

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 160A.

The history of architecture from 1900 to the present. Examination of modern and post-modern architecture and city planning in its social, political, and artistic context. The scope is global.

136C. Architecture and City Planning in California and the Southwest (1600-Present)
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 165D.

An analysis of urban and rural planning in the American Southwest from the founding of Santa Fe in 1609 to the present-day environs of the urban areas of Albuquerque, Phoenix, Los Angeles, and San Francisco. Study of the interrelationship of the environment, technology, and imagery, from the Hispanic decades of the seventeenth century through the early nineteenth century to the early 1980s. Field trips will be conducted to important sites and buildings located in Southern California.

136E. Modern Design
(4) ARMI

Prerequisite: upper-division standing.

Not open for credit to students who have completed Art History 166.

A survey of twentieth-century commercial arts, including cars, fashion, furniture, graphic arts, industrial design, and architecture.

136F. Theories of Architecture
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 165A.

A historical analysis of the relationship between architectural theories and architecture and urban planning from the fifteenth through the twentieth century.

136H. Housing American Cultures
(4) CHATTOPADHYAY

Prerequisite: not open to freshmen.

The history of American domestic architecture from the colonial period to the present within a framework of cultural plurality. Examination of the relation between ideas of domesticity, residential design, individual, regional, and ethnic choices.

136I. The City in History
(4) CHATTOPADHYAY

Prerequisite: not open to freshmen.

An historical introduction to the ideas and forms of cities with emphasis on modern urbanism. Examination of social theory to understand the role of industrial capitalism and colonialism in shaping the culture of modern cities, the relationship between the city and the country, the phenomena of class, race and ethnic separation.

136J. Landscape of Colonialism
(4) CHATTOPADHYAY

Prerequisite: not open to freshmen.

Examination of architecture, urbanism and the landscape of British and French colonialism between 1600 and 1950. Introduction to the different forms of colonialism, colonial ideology and the architecture of colonial encounter in North America, Asia, Africa and Australia.

137AA-ZZ. Special Topics in Architecture
(4) STAFF

Prerequisite: not open to freshmen.

May be repeated for credit to a maximum of 12 units provided letter designations are different.

Special topics in architecture.

A. History of Landscape Gardens

138A. Nineteenth-Century Photography
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 159G.

Themes, techniques, historical and aesthetic evolution of photography as an art form.

138B. Contemporary Photography
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 160H.

American and European post-World War II photography considered as a living art form.

138C. Social Documentary Photography
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 170C.

The course traces the interrelationship between photographic art history and social history. Topics include American Indian tribes, metropolitan slums, Dust Bowl farm conditions, and present-day minorities such as Blacks and women.

138D. History of Photography
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 170A.

A critical survey of nineteenth- and twentieth-century photography, studied in cultural context with emphasis on images and the visions which produced them. Study of the relation between photography and art movements (impressionism, surrealism, photorealism, etc.).

138E. History of Landscape/Cityscape Photography
(4) KELLER

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 170B.

Course emphasizes adventurous camera explorations of untouched natural scenery from the Rocky Mountains to Arctic glaciers and African deserts (nineteenth century); and systematic documentation of the known and inhabited world, especially the visual sign language of urban environments (twentieth century).

138F. History of Prints and Print Culture
(4) STAFF

Prerequisite: not open to freshmen.

Not open for credit to students who have completed Art History 164F.

The techniques, production, and use of printed images.

139AA-ZZ. Special Topics in Photographic History
(4) STAFF
Prerequisite: not open to freshmen.
May be repeated for credit to a maximum of 12 units provided letter designations are different.
Specialized classes exploring questions of methodology, as well as significant themes and major figures in the history of photography. Emphasis on intensive investigation of research issues as opposed to extensive period coverage.

140A. Portraiture
(4) STAFF
Prerequisite: not open to freshmen.
Examination of the traditions and functions of portraiture. Themes may include the creation of the self; art and propaganda; the self-portrait and artistic identity.

140B. Landscape Painting and Design
(4) STAFF
Prerequisite: not open to freshmen.
An examination of the history and contexts of landscape painting. Themes will vary, but may include: landscape and ideology; work and recreation; urban and rural culture.

140C. The Art of Festivals
(4) COLE
Prerequisites: Art History 6E.
Not open to freshmen. Not open for credit to students who have completed Art History 151H.
An examination of African, Oceanic, and American Indian festivals and rituals as works of art; structural and functional analyses of ceremonies recorded on film and videotape. Emphasis on the aesthetic interaction of dance, music, gesture, and the visual arts.

140D. Art of the Self Taught
(4) COLE
Prerequisite: upper-division standing.
Not open for credit to students who have completed Art History 151S.
Overview of several disparate categories such as Folk, Outsider, Vernacular, Art Brut, Naïve, Visionary, Environments, and other outside mainstream Western movements and periods. Artists covered are self-taught rather than part of the professional dealer, gallery, museum establishment.

141A. Museum Practices and Techniques
(4) ROBERTSON
Prerequisites: not open to freshmen; consent of instructor.
Not open for credit to students who have completed Art History 164C. Limited enrollment.
Discussion of various aspects of museum work: management principles, the cataloguing and care of art objects, exhibitions and acquisitions, administrative procedures, museum architecture. Specialist lecturers and visits of museums and their facilities.

141B. Internship
(1-4) STAFF
Prerequisites: not open to freshmen; consent of instructor.
Students must have a 3.0 grade-point average. No more than 4 units applicable to the major.
Under supervision of art history faculty, students may obtain credit for work in a museum, gallery, or art-related business. One hour/week/unit internship, plus weekly meetings and final evaluation session. Written report required.

143B. Feminism and Art History
(4) ADAMS, BERMINGHAM, MONAHAN, SOLOMON-GODEAU
Prerequisite: not open to freshmen.
Not open for credit to students who have completed Art History 191A.
Examination of both feminist critiques of Western representational practices and feminist interventions in art history. Topics to be determined by instructor.

143C. Gender and Representation
(4) ADAMS, BERMINGHAM, MONAHAN, SOLOMON-GODEAU
Prerequisite: not open to freshmen.
Not open for credit to students who have completed Art History 191B.
Focus on the construction of gender identities through high art and popular media. Topics will vary with instructor.

144A. The Avantgarde in Russia
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as Slavic 144A. Not open for credit to students who have completed Russian 144A.
The Russian avantgarde in its European context. The avantgarde and the revolution of 1917. Analysis of key figures and movements within the Russian avantgarde. Taught in English.

144B. Vision
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as Slavic 144B. Not open for credit to students who have completed Russian 144B.
Study of different concepts of visual perception in Russian nineteenth- and twentieth-century literature and the visual arts. Writers and artists include N. Gogol, V. Nabokov, K. Malevich, V. Shklovsky, and intellectual schools and movements (constructivism, socialist realism, conceptualism). Taught in English.

144C. Contemporary Art in Russia and Eastern Europe
(4) SPIEKER
Prerequisite: upper-division standing.
Same course as Slavic 144C. Not open for credit to students who have completed Russian 144C.
Study of central intellectual and aesthetic trends in the late Soviet period and in contemporary post-Soviet Russia and Eastern Europe. Analysis of literary texts and the visual arts. Taught in English.

144D. Russian Art
(4) SPIEKER
Prerequisite: upper-division standing.
Not open for credit to students who have completed Russian 118. Same course as Slavic 118.
Introduction to Russian art and aesthetic theory from the beginning to the present. Readings and lectures in English.

147AA-ZZ. Special Topics in Theory
(4) STAFF
Prerequisite: not open to freshmen.
May be repeated for credit to a maximum of 12 units provided letter designations are different.
Special topics in theory.

184A. Classicism in Western Art and Culture
(4) WILLIAMS
Prerequisite: not open to freshmen.
Not open for credit to students who have completed Art History 164I.
A survey of the ways in which the forms and values of classical antiquity have been appropriated by later phases of Western civilization.

184B. The City of Rome: Image and Ideology
(4) STAFF
Prerequisite: upper-division standing.
Not open for credit to students who have completed Art History 164B.
The image and ideology of Rome as a cultural, political, and religious center as expressed in its art, architecture, and urban structure from antiquity to the present.

185AA-ZZ. Special Topics in Art History
(4) STAFF
Prerequisite: not open to freshmen.
May be repeated for credit to a maximum of 12 units provided letter designations are different.
Special topics in the history of art and architecture.

186A. Seminar in Ancient Greek Art
(4) MACK
Prerequisite: upper-division standing.
Advanced studies in ancient Greek art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186B. Seminar in Greek and Roman Archaeology/Architecture
(4) YEGÜL
Prerequisite: upper-division standing.
Advanced studies in Greek and Roman archaeology and architecture. Emphasis on classical heritage of Asia Minor (Turkey). Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186C. Seminar in Medieval Art
(4) AYRES
Prerequisite: upper-division standing.
Advanced studies in medieval art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186D. Seminar in Medieval Architecture
(4) ARMI
Prerequisite: upper-division standing.
Advanced studies in medieval architecture. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186E. Seminar in Fifteenth and Sixteenth Century Northern European Art
(4) MEADOW
Prerequisite: upper-division standing.
Advanced studies in fifteenth and sixteenth century Northern European art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186F. Seminar in Fifteenth and Sixteenth Century Southern Renaissance
(4) WILLIAMS
Prerequisite: upper-division standing.
Advanced studies in fifteenth and sixteenth century southern renaissance art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186G. Seminar in Seventeenth Century Northern European Art
(4) ADAMS
Prerequisites: art history majors only; upper-division standing.
Advanced studies in seventeenth century Northern European visual culture. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186H. Seminar in Seventeenth Century Southern European Art
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in seventeenth century art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186I. Seminar in Eighteenth Century Art
(4) BERMINGHAM
Prerequisite: upper-division standing.
Advanced studies in eighteenth century art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186J. Seminar in Nineteenth Century Modern Art
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in nineteenth century modern art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186K. Seminar in Twentieth Century Modern Art
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in twentieth century modern art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186L. Seminar in Art of the Americas
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in the art of the Americas. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186M. Seminar: Problems in the History of Chicano Art
(4) FAVELA
Prerequisites: upper-division standing; consent of instructor.
Not open for credit to students who have completed Chicano Studies 195.
An examination of definitions of Chicano and Chicana art. Students conduct primary research and analyze the pluralistic facets of Chicana and Chicano art, artists, and art criticism within the context of mainstream American art, institutions, and culture.

186N. Seminar in African Art
(4) COLE
Prerequisite: upper-division standing.
Advanced studies in African art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186O. Seminar in Latin American Art
(4) FAVELA
Prerequisite: upper-division standing.
Advanced studies in Latin American art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186P. Seminar in Pre-Columbian/Colonial
(4) PETERSON
Prerequisite: upper-division standing.
Advanced studies in pre-Columbian/colonial art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186Q. Seminar in Islamic Art and Architecture
(4) KHOURY
Prerequisite: upper-division standing.
Advanced studies in Islamic art and architecture. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186R. Seminar in Asian Art
(4) STURMAN
Prerequisite: upper-division standing.
Advanced studies in Asian art. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186S. Seminar in Architectural History
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in architectural history. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186T. Seminar in Photographic History
(4) KELLER
Prerequisite: upper-division standing.
Advanced studies in photographic history. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186U. Seminar: Genres
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in art historical genres. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186V. Seminar: Theory
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in art theory. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186W. Seminar: Historiography
(4) STAFF
Prerequisite: upper-division standing.
Advanced studies in historiography. Topics will vary. This course requires weekly readings and discussion, and the writing of a research seminar paper.

186X. Seminar in Modern Design
(4) ARMI
Prerequisites: upper-division standing; consent of instructor.
Industrial design, graphic arts, fashion and architecture in America after World War II. Students give oral reports and write a paper on a topic in the history of twentieth-century commercial design.

199. Independent Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in art history; consent of instructor and department.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
Advanced individual problems.

199RA. Undergraduate Research Assistant
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in art history; consent of instructor and department.
Student must have a 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

GRADUATE COURSES

200A-B. Proseminar: Introduction to Art-Historical Methods
(4-4) STAFF
Prerequisite: graduate standing.
Required of all first-year M.A. and Ph.D. students.
Introduction to art-historical methods, with emphasis on the historical development of current practices, critical theory, debates within the field, and cross-disciplinary dialogues.

201E. Tel Dor Archaeological Field School
(8) MACK
Prerequisite: graduate standing.
Introduction to archaeological excavation technique, artifact analysis, and the archaeology of the Levant (Middle Bronze Age to Late Imperial Roman). Students participate in six-week summer excavation season at Tel Dor, Israel, including lectures on the history and archaeology of the Levant, practica in archaeological method, and field trips to archaeological sites and museums in Israel.

210A-B. Two-Term Seminar
(4-4) STAFF
Prerequisite: graduate standing.
A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Art History 210B.
Seminar involving special circumstances and extended research.

250A. Methods and Techniques in Art History Research
(4) STAFF
Prerequisite: graduate standing.
Reading and a series of discussions and research problems designed to give the student understanding of the different approaches to historical study of works of art.

251B. Seminar: Topics in African Arts in Context
(4) COLE
Prerequisite: graduate standing.
Special research in African art.

252A. Seminar: Topics in Ancient Art
(4) STAFF
Prerequisite: graduate standing.
Special research in ancient art.

252B. Seminar: Topics in Roman Architecture and Urbanism
(4) YEGÜL
Prerequisite: graduate standing or senior art history majors with consent of instructor.
Special research in Roman and late antique architecture.

253A. Seminar: Topics in Medieval Art
(4) AYRES
Prerequisite: graduate standing.
Special research in medieval art.

253D. Seminar: Topics in Medieval Architecture
(4) STAFF
Prerequisite: graduate standing.
Special research in Romanesque and/or Gothic architecture.

253E. Seminar in Romanesque Architecture and Sculpture
(4) ARMI
Prerequisite: graduate standing.
Seminar on major topics and problems in the monumental arts of the eleventh and twelfth centuries in Europe.

253G. Seminar: The Origins of Gothic
(4) ARMI
Prerequisite: graduate standing.
A seminar on the major topics and problems in first and second generation Gothic sculpture and architecture in the Ile-de-France.

254. Seminar: Topics in Pre-Columbian/Colonial Latin American Art
(4) PETERSON
Prerequisite: graduate standing.
Special research in pre-Columbian and colonial Latin American art topics.

254D. Special Topics in Pre-Columbian/Colonial Art
(4) PETERSON
Prerequisite: graduate standing.
Special topics in pre-Columbian and colonial Latin American art. Topics will vary.

255A. Seminar: Topics in Italian Renaissance Art
(4) STAFF
Prerequisite: graduate standing.
Special research in Renaissance art.

255D. Seminar: Topics in Early Modern Art in Northern Europe
(4) STAFF
Prerequisite: graduate standing.
Special research in northern Renaissance figurative arts of the fifteenth and/or sixteenth centuries.

257A. Seminar: Topics in Seventeenth-Century Art
(4) ADAMS
Prerequisite: graduate standing.
Special topics in seventeenth-century art.

257F. Seminar: Topics in Gender and Representation
(4) ADAMS
Prerequisite: graduate standing.
Special topics in gender and representation in sixteenth- and seventeenth-century European art.

258A. Seminar: Topics in Eighteenth-Century Art
(4) STAFF
Prerequisite: graduate standing.
Special research in eighteenth-century art with special emphasis on painting and prints.

259A. Seminar: Topics in Nineteenth-Century European Art
(4) BERMINGHAM, SOLOMON-GODEAU
Prerequisite: graduate standing.
Special research in nineteenth-century art.

259D. Seminar: Topics in Nineteenth-Century British Art
(4) STAFF
A one-quarter special research seminar in British art.

260D. Seminar: Topics in European Art of the Twentieth Century
(4) STAFF
Prerequisite: graduate standing.
Special research in twentieth-century art.

261A. Seminar: Topics in American Art
(4) ROBERTSON
Special research in American painting and sculpture, 1700 to 1950.

261E. Seminar: Topics in History of Photography
(4) KELLER
Prerequisite: graduate standing.
Special problems in the history of photography.

262C. Seminar: Topics in Modern Latin American Art
(4) FAVELA
Prerequisite: graduate standing.
The main developments of modernism in late nineteenth- and early twentieth-century Latin America: late impressionism and symbolism and avant-garde movements in Mexico, Brazil, and Argentina. Frequent reference will be made to European trends and their impact on modern Latin American art.

265. Seminar: Topics in Architectural History
(4) YEGÜL, CHATTOPADHYAY
Prerequisite: graduate standing.
Special research in the history of architecture.

266. Seminar: Topics in Modern Architecture
(4) YEGÜL
Prerequisite: graduate standing.
Special research on problems of nineteenth- and twentieth-century European or American architecture.

275B Seminar: Topics in Islamic Architecture
(4) KHOURY
Prerequisite: graduate standing.
Special research in Islamic architecture.

27SE. Seminar: Topics in Islamic Art
(4) KHOURY
Prerequisite: graduate standing.
Special topics in Islamic art and/or architecture. Topics will vary.

282A. Seminar: Topics on East Asian Art
(4) STURMAN
Prerequisite: graduate standing.
Research on select problems on the arts of China, Japan, or Korea.

291A. Seminar: Topics in Feminism and Art History
(4) STAFF
Prerequisite: graduate standing.
Same course as Women's Studies 291A.
Course will examine both feminist critiques of Western representational practices and feminist interventions in the history of art, including how the history of women artists has been constructed and how it might be rewritten. Topics will vary.

291B. Seminar: Topics in Gender and Representation
(4) STAFF
Prerequisite: graduate standing.
Same course as Women's Studies 291B.
Course will focus on the construction of gender identities through high art and popular media, the construction of femininities and masculinities through images and the significance of gender as a basic representational category. Topics will vary.

292A. Seminar: Topics in Visual Culture
(4) STAFF
Prerequisite: graduate standing.
Visual media from both high and popular culture. Topics to be determined by instructor.

292B. Seminar: Topics in Contemporary Critical Theory
(4) STAFF
Prerequisite: graduate standing.
Topics will include: deconstruction; semiotics; structuralism and post-structuralism; psychoanalysis; feminism.

292E. Seminar: Topics in Comparative Studies
(4) STAFF
Prerequisite: graduate standing.
Research seminar in comparative studies in art and architectural history. Issues and topics vary, but focus on methodological and epistemological implications of analysis across established geographical, national, cultural, and/or period boundaries.

294. Seminar in Museum Practices
(4) ROBERTSON
Prerequisite: graduate standing
May be repeated for credit.
Methods in museum practice. Content will vary according to museum program and art exhibition involved. (S)

295. Seminar: Advanced Readings in Art History
(4) STAFF
Prerequisites: graduate standing; consent of instructor; department approval.
Source readings for graduate students. Independent reading and research in connection with an undergraduate lecture course.

296A. Theories of the Modern
(4) SPIEKER
Prerequisite: graduate standing.
Same course as German 270.
Analysis of theories and critiques of modernism and modernity from Benjamin to Adorno and Derrida, with special focus on the historical avantgarde.

500. Apprentice Teaching
(1-4) STAFF
Prerequisites: graduate standing; consent of instructor; department approval.
No unit credit allowed toward degree.
For teaching assistants, course includes directed readings, instruction in use of visual aids, pedagogical techniques, design of materials for discussion sections, and methodological analyses. Attendance at lectures in the course to which the teaching assistant is assigned is a requirement.

502. Graduate Symposium in Art History
(1-4) STAFF
Prerequisites: graduate standing; department approval. No unit credit allowed toward degree.
Under the supervision of the graduate advisor and individual faculty advisors, directed study in presentation techniques, bibliographical and publication methods, and professional outreach.

550. Tools for Art Historical Research
(1-4) STAFF
Prerequisites: graduate standing; department approval.
No credit allowed toward degree.
Audit credit for courses in other departments needed to build a base for graduate research, or extra curricular work, such as museum internship.

595. Group Studies
(1-12) STAFF
Prerequisites: graduate standing; consent of instructor and department approval.
Informal reading and discussion.

596. Independent Study
(1-8) STAFF
Prerequisites: graduate standing; consent of instructor and department approval.
Individual tutorial. A written proposal must be approved by the department chair.

597. Reading for Examination
(1-12) STAFF
Prerequisites: graduate standing; consent of instructor and department approval.
Ph.D. students are limited to 12 units.
Preparation for terminal M.A. or for Ph.D. examinations.

598. Master's Thesis Preparation
(1-12) STAFF
Prerequisites: graduate standing; consent of instructor and department approval.
No credit allowed toward degree. For Plan I students only.
Master's Thesis research and preparation.

599. Ph.D. Dissertation Preparation
(1-12) STAFF
Prerequisites: graduate standing; consent of instructor and department approval.
Dissertation research and preparation.

Interdisciplinary Studies

Interdisciplinary Studies,
Office of Student Academic Affairs,
College of Letters and Science,
Cheadle Hall 1117;
Telephone (805) 893-2038
E-mail: rfletcher@LTSC.ucsb.edu

The major in interdisciplinary studies was created to provide a means for students to achieve particular intellectual goals that cannot be met by any existing major. Successful interdisciplinary studies majors are those that carry a coherent theme across a group of three or more departments—a theme that cannot easily be examined within a single major or double-major format. Students are urged to consult with a college advisor early in their academic careers for assistance in formulating their objectives within the major and in identifying the courses at UCSB which will best fulfill those goals.

Students wishing to enter the major must draw up a proposed program of study in three separate departments according to the requirements listed below. After approval by the chairs of the selected departments and review by the office of the dean, the proposal is submitted to the executive committee of the College of Letters and Science, which has sole authority for approving admission to the major. The executive committee evaluates proposals according to a combination of the following criteria: (1) overall coherence and academic integrity of the proposed set of courses to be taken in each department; and (2) rationale for the choice of major departments, as explained in a statement of purpose submitted by the student. The program approved by the executive committee constitutes a contract and may be altered only by petition to the committee.

Applications for admission to the major are available in the college office, Cheadle Hall 1117. The entire process of admission—from first picking up application papers to final approval by the committee—can take several weeks. Interested students are advised, therefore, to begin the process during their sophomore year, and in no case later than the end of their junior year. Applicants to this program are normally not admitted as freshmen. Those who have reached their senior year will be admitted only in exceptional circumstances.

The interdisciplinary studies major does not exempt prospective teaching credential candidates from the Multiple Subject Assessment for Teachers (MSAT). For such exemp-

tions, students must complete the Multiple Subject Preparation Program (MSPP). Students interested in UCSB's credential requirements are urged to consult the Teacher Education Program in the Graduate School of Education in Phelps Hall 2517 as soon as possible.

Students who intend to pursue graduate or professional studies are urged to consult advisors in their proposed fields to determine the prerequisites for admission to the desired graduate programs. The specific areas of emphasis within interdisciplinary studies will not be noted on student transcripts.

Undergraduate Program

Bachelor of Arts—Interdisciplinary Studies

Preparation for the major. A minimum number of lower-division courses as specified by each of the three selected departments must be completed. A list of the current requirements for each department may be obtained at department offices or the college office, Cheadle Hall 1117. At the time of application for the major, the student must have earned a grade-point average of at least 2.0 in each academic department making up the major. Interdisciplinary studies majors are required to complete all college and university degree requirements, including the General Education Program.

Upper-division major. Students must complete a minimum of 56 upper-division units, selected from three departments in the College of Letters and Science, with at least 16 units in each department. The senior thesis or research project requirement is included in the 56 upper-division units. Some departments allow only a restricted number of their upper-division courses to be applied to this major. Students should ask at the office of prospective departments, or the college office, for a current list of courses that will be accepted for the interdisciplinary studies major. Upper-division courses which are accepted in transfer from other four-year colleges and universities will be accepted for major credit in appropriate departments only if they conform to courses approved for the major in that department. Different foreign languages are considered to be in different departments. Courses in military science and physical activities are not acceptable for the major. Economics 109, Mathematics 100A-B may be acceptable in the preparation for the major, but cannot be applied to the upper-division major. No more than 12 units of performance courses (Dance 149, Dramatic Art 149, Music Performance Laboratories, or equivalent transfer courses) can apply to the major, and no more than 4 units of such courses may be applied from any single department. Courses which are to be applied to the major may not be taken on a passed/not passed basis.

Senior thesis or research project requirement. As a means of tying together the various strands of their study in a coherent and academically significant fashion, interdisciplinary studies majors are required to complete at least one 4-unit course in one of the three selected departments in which a senior thesis or research project will be completed. A list of suitable courses is available at department offices and the college office.

Interdisciplinary Courses

Interdisciplinary courses are either sponsored by the College of Letters and Science or by academic departments in the college. The courses present opportunities to study certain broad topics from perspectives which cross traditional departmental lines. Many of the courses are team taught, and all encourage examination of issues using a variety of different methodologies.

LOWER DIVISION

1. Library Skills
(1) STAFF
Available PINP only; may not be repeated for credit.
Course designed to assist entering students in learning to use effectively essential facilities and resources of the UCSB Library.

5. A Survey of Computing for the Arts and Humanities
(4) MARCUS
Not open to pre-computer science or computer science majors.
An introduction to computing for students in the arts and humanities. BASIC, PASCAL, applications programs. Course will use the UCSB Instructional Computing facilities.

10. Introduction to Grammatical Categories and Analysis
(2) STAFF
Introduction to the college level study of foreign languages from a linguistic point of view. Survey of grammatical categories, grammatical syntactic analysis, illustrated, when possible, through English. Clarification of concepts to provide the needed common ground for college students of languages, linguistics, and English.

15. General Computing Skills
(4) GOTTSCHALK
Not open for credit to students who have completed German 40.
Introduction to the use of micro-computers in language and literature as well as general computer literacy for all students. Hands on lab instruction. Involves the major aspects of computing essential for university level work.

20. Introduction to the University
(3) STAFF
Prerequisite: freshman standing.
A course designed to introduce first year students to the university. Topics include: the university as a community of scholars, student sub-culture, student rights, university and community, university as policy, personal growth in college.

60. Introduction to Folklore
(4) LUNDELL
Introduction to folklore genres with a multicultural perspective. Definitions, theories, collection of folklore. Proverb. Riddle. Children's folklore. Folktale. Legend. Myth.

93LS. Introduction to Research in the Social, Life, and Physical Sciences
(1-5) POLNE-FULLER
Prerequisite: consent of instructor.
Introduction to college level research experiences in the social, life or physical sciences. Students participate in research in UCSB laboratories and learn to use tools and techniques in an organized laboratory class setting.

93S. Readings and Lectures in the Social, Life, and Physical Sciences
(4) POLNE-FULLER
Prerequisite: consent of instructor.
Introductory course for students interested in research in the social, life or physical sciences. Students read papers written by and about recent research at UCSB and meet with researchers to discuss their research tools and concepts.

94AA-ZZ. Freshman Seminars
(1) STAFF
Prerequisite: freshman standing.
Selected topics of interest to students pursuing various degrees in the College of Letters and Science. Small group discussions which emphasize active class participation. Topics will vary each quarter.

UPPER DIVISION

100. Library Research Bibliography
(2) STAFF
Recommended preparation: Interdisciplinary 1.
Students critically examine the complex range of library resources, from print to electronic, in their field. A brief research paper analyzing the student's research progress is required. Students also develop an extensive analytical bibliography. Suggested for students concurrently enrolled in courses requiring library research, or for those who want to pursue library research in other areas.

103A. Interdisciplinary Seminar in Literature and Performance
(4) KAWALEK
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units.
Interdisciplinary "laboratory" for students from all majors, in which all types of literature (novels, biographies, short stories, poetry, essays, diaries, letters, journals, newspapers, transcribed interviews) are adapted for the stage. Specific course focus will be determined by the instructor.

103B. Interdisciplinary Seminar in Literature and Performance
(4) KAWALEK
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 8 units.
Continuation of Interdisciplinary 103A with opportunities for students from all majors to experience and communicate literature via performance. Work includes: further development and rehearsal of script; outreach to community via rehearsals, workshops, performance; post-performance discussions. Specific course focus determined by instructor.

10S. European Renaissance
(4) HOFFMEISTER
Prerequisite: upper-division standing.
Study of the origins and reception of Renaissance humanism across national frontiers (e.g., Italy, Spain, Germany) focusing on the struggle between humanism and its antagonists (scholasticism, Reformation, dark forces such as witchcraze, peasant rebellion) from an interdisciplinary perspective.

106. The Picaresque Novel in Western Europe and America
(4) HOFFMEISTER
Prerequisite: upper-division standing.
An interdisciplinary course about the rise of the rogue's novel in Spain and its transformation in various national literatures; combining an overview of theoretical problems with the close interpretation of masterpieces of this genre from Lazarillo de Tormes to Saul Bellow's *The Adventures of Augie March*. Taught in English.

110. Mother in Myth and Tales
(4) LUNDELL
Prerequisite: upper-division standing.
The mother as goddess and in her secular reality is discussed using myths, folktales and legends from Native American, African American, Chicano/Latino, Asian American, and Germanic cultures.

11S. Introduction to Folk Tales
(4) LUNDELL
Prerequisite: English 10 or upper-division standing.
Broad survey of folk tales from all over the world. Types, motifs, research and history.

118A. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Prerequisite: upper-division standing.

Same course as German 118A.

Interdisciplinary introduction to the application of multi-media computing on the micro-computer to all aspects of research and teaching. Hands on teaching in lab involving a number of HyperMedia programs.

118B. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Prerequisite: upper-division standing.

Same course as German 118B.

Intermediate level continuation of Interdisciplinary 118A.

118C. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Prerequisite: upper-division standing.

Advanced level continuation of Interdisciplinary 118B.

123A. Educational Hypermedia and Multimedia
(4) CHUN

Prerequisite: upper-division standing.

Examination of educational rationales for the design of hypermedia applications. Students evaluate existing programs and apply principles of learning with media to the development of their own projects using tools to acquire and manipulate text, images, sound, and video.

123B. Educational Hypermedia and Multimedia
(4) CHUN

Prerequisite: Interdisciplinary Studies 123A.

Continuation of Interdisciplinary Studies 123A. Further investigation of teaching and learning with media, design of hypermedia applications, and evaluation of their usability and effectiveness.

130. Animals in Human Society: Animal Use Issues
(4) SHELTON

Prerequisite: upper-division standing.

A study of the historical and modern uses which humans make of other animals for food, clothing, labor, entertainment, research and pets, and exploration of the changing attitudes toward these uses.

134. Multi-Media and Computer Technology in the Science Classroom
(4) PROTHERO

Application, design, creation and testing of computer delivered multi-media for the science classroom. Emphasis on theory, application, and teamwork. Multi-media is a strong growth industry. This course is useful for potential educators and multi-media developers.

150. Voices of the Stranger
(4) STAFF

Portrayals and analyses of the diversity of ethnic, racial, cultural, and religious experience in the United States in the contemporary era.

181H. Literary Translation: Theory and Practice
(4) LEVINE, LÉVY

Prerequisites: upper-division standing; enrollment in college, Spanish, or French honors program.

Critical and theoretical work on selected Hispanic and French writers will be studied along with literary, philosophical, and linguistic texts. Students will work on an independent translation project in addition to a paper on critical or theoretical aspects of translation.

184AA-ZZ. Honors Forum: Special Topics
(4) STAFF

Prerequisites: upper-division standing; enrollment in Letters and Science Honors Program.

May be repeated for credit to a maximum 16 units provided letter designations are different.

An interdisciplinary approach to topics of national and world concerns. Readings will be assigned from several disciplinary perspectives.

185AA-ZZ. Interdisciplinary Honors Seminar in the Humanities
(4) STAFF

Prerequisite: consent of instructor.

Interdisciplinary examination of selected topics, texts, theories, and/or methods in the humanities. Particular course focus will be determined by the instructor(s) each time the course is offered.

188A-B. Classicism and Romanticism in European Letters and Music
(4-4) KITTLER, FREEMAN

Recommended preparation: reading knowledge of music or one or more European languages.

The interaction between European music and letters, considered through the aesthetic concepts of classicism and romanticism.

A. 1700-1815,
B. 1815-1880

190AA-ZZ. Interdisciplinary Studies Senior Project
(4) STAFF

Prerequisites: liberal studies or interdisciplinary studies majors only; senior standing only.

Working with a faculty member in one of the departments of concentration, completion of a substantive project which integrates the theme proposed in the liberal studies or interdisciplinary studies major program.

191. Independent Study in Folk/Fairy Tales and Folklore
(1-5) LUNDELL

May be repeated for credit to a maximum of 12 units.

Research in areas of folktales, fairy tales and folklore not covered by exiting courses.

192DC. Washington Center Internship
(4-8) STAFF

Prerequisites: upper-division standing; consent of instructor.

Acceptance to Washington Center.

Courses designed for students to obtain credit for internship while at the Washington Center.

199DC. Independent Research at Washington Center
(4) STAFF

Prerequisites: upper-division standing; consent of instructor.

Acceptance to Washington Center. May be repeated for credit to a maximum of 8 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research for those enrolled in the Washington Center. Enrolled students will complete a research project related to the students' internship and drawing on the special resources of the Washington area.

GRADUATE COURSES

200. Seminar in Cognitive Science
(2) STAFF

Prerequisite: graduate standing.

Research seminar on topics in cognitive science.

201AA-ZZ. Graduate Seminar in the Humanities
(4) STAFF

Prerequisite: consent of instructor.

Interdisciplinary examination of selected topics, texts, theories, and methods in the humanities. Particular course focus will be determined by instructors each time the course is offered.

217A. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Not open for credit to students who have completed German 217A.

Interdisciplinary introduction to the application of multi-media computing on the micro-computer to all aspects of research and teaching. Hands on lab involving a number of HyperMedia programs.

217B. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Not open for credit to students who have completed German 217B.

Intermediate level continuation of Interdisciplinary 217A.

217C. Seminar on Multi-Media Computing
(4) GOTTSCHALK

Not open for credit to students who have completed German 217C.

Advanced level continuation of Interdisciplinary 217B.

223A. Educational Hypermedia and Multimedia
(4) CHUN

Prerequisite: graduate standing.

Examination of educational rationales for the design of hypermedia applications. Students evaluate existing programs and apply principles of learning with media to the development of their own projects using tools to acquire and manipulate text, images, sound, and video.

223B. Educational Hypermedia and Multimedia
(4) CHUN

Prerequisite: graduate standing.

Continuation of Interdisciplinary 223A. Further investigation of teaching and learning with media, design of hypermedia applications, and evaluation of their usability and effectiveness.

234. Multi-Media and Computer Technology in the Science Classroom
(4) PROTHERO

Application, design, creation and testing of computer delivered multi-media for the science classroom. Emphasis on theory, application, and teamwork. Multi-media is a strong growth industry. This course is useful for potential educators and multi-media developers.

250. Seminar in the Teaching of Academic Writing
(2) STAFF

Same course as Writing 250.

Instruction in methods of teaching academic writing to undergraduates. Topics include syllabus design, sequencing of assignments, grading, and teaching students to master disciplinary conventions.

251. Academic Research Writing
(2) STAFF

Same course as Writing 251. Lecture, 1 hour; laboratory, 1 hour.

Instruction in the writing of graduate academic documents, including proposals, theses, course papers, articles for publication, and c.v.'s. Emphasis on writing clearly and mastering disciplinary conventions. Lecture plus laboratory.

288A-B. Classicism and Romanticism in European Letters and Music
(4-4) FREEMAN, KITTLER

Recommended preparation: reading knowledge of music and one or more European languages.

The interaction between European music and letters, considered through the aesthetic concepts of classicism and romanticism.

A. 1770-1815
B. 1815-1880

505. Preparing for Faculty Roles in Higher Education
(1) RONKOWSKI, FLACKS

Prerequisite: completion of at least two years of graduate studies.

Preparation for faculty roles in higher education. UCSB faculty and administrators will discuss the ways colleges and universities are structured and how they function, the teaching role of faculty, and university expectations of faculty.

592. Research Seminar in Human Development
(1) STAFF

Prerequisite: acceptance to Interdisciplinary Development Program; graduate standing; consent of instructor.

Special interest group research seminar in human development.

594AA-ZZ. Advanced Studies in the Humanities
(4) STAFF
Prerequisite: consent of instructor.
In-depth consideration of selected cross-disciplinary humanistic topics, issues, and concerns. Special focus will be determined by the instructor or instructional teams each time the course is offered.

Other Interdisciplinary Courses

Medieval Studies: see 199
Renaissance Studies: see 100 and 199

Islamic and Near Eastern Studies

Global and International Studies Program, Office of the Provost, Humanities and Social Sciences 3042; Telephone (805) 893-7860
E-mail: gisp@alishaw.ucsb.edu
Web site: www.gisp.ucsb.edu/ines.htm
Chair: Dwight F. Reynolds

Islamic and Near Eastern Studies Faculty Advisory Committee

Marguerite Bouraad-Nash, Ph.D. (Political Science)
Juan Campo, Ph.D. (Religious Studies)
Magda Campo, M.A. (Religious Studies)
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Devora Sprecher, M.A. (Germanic, Slavic, and Semitic Studies)
Christine Thomas, Ph.D. (Religious Studies)
Fikret Yegul, Ph.D. (History of Art and Architecture)

Islamic and Near Eastern Studies is an interdisciplinary program in which students can explore the myriad peoples, societies, languages, and cultures of the Near East and the Islamic worlds from a variety of perspectives. The program brings under one roof studies on two overlapping but quite distinct entities: first, the Near East in the Ancient, Islamic, and modern periods; second, the religious and cultural traditions of Islam, not only within its original Near Eastern homeland, but also in other areas where these traditions have come to play a major role—South and Southeast Asia, Africa, and (more recently) Europe and North America. In studying the Near East, it is essential to realize that the cultural, religious, and intellectual works generated there by Judaism, Christianity, and Islam have been so durable, and so closely intertwined with one another, that our understanding of any one of them is fatally flawed if we try to study it in isolation from the other two. Likewise, Islam was born in the Near East and evolved its core traditions there, but it has long since taken root throughout the world and must be studied in a world context.

The B.A. in Islamic and Near Eastern Studies aims to provide an educational experience satisfying in and for itself, while simultaneously developing the body of knowledge and skills necessary for graduate study or an area-based career in business, government, or international development. Obviously no undergraduate major can provide a deep expertise in the whole of this vast arena. However, students should expect to achieve a well-defined sense of the whole, as well as to acquire the basic linguistic and conceptual tools needed to approach the Near East and Islam with real understanding. To this end, the program gives students considerable flexibility in designing their course of studies, but it also demands coherence and rigor.

As a key part of their studies Islamic and Near Eastern Studies strongly recommends, though does not require, that students spend a substantial period of time abroad in the UC Education Abroad Program centers in Jerusalem or Cairo, or in other suitable programs. Members of the Advisory Committee will work actively with interested students to help them identify appropriate opportunities for study abroad.

The program does not offer the M.A. or Ph.D. However, it can help graduate students to coordinate interdisciplinary study across departmental lines, and it also provides an enrichment of UCSB's own resources through the lectures, colloquia, and seminars which it sponsors. Likewise, Islamic and Near Eastern Studies can offer limited financial assistance, on a competitive basis, to qualified graduate students. Finally, the program also collaborates with the Von Grunebaum Center for Near Eastern Studies at UC Los Angeles in areas of common concern.

Undergraduate Program

Bachelor of Arts—Islamic and Near Eastern Studies

Preparation for the major. Students must take Islamic and Near Eastern Studies 45 (same as History 45). In addition, they must complete either History 46 or Religious Studies 5, and one of the following language series: Hebrew 1, 2, 3, 4, 5, 6 (Modern Hebrew: Department of Germanic, Slavic, and Semitic Studies); Religious Studies 10A-B-C-D-E-F (Arabic); Religious Studies 17A-B-C (Biblical Hebrew); Religious Studies 18A-B (Targumic Aramaic); Religious Studies 19A-B-C (Syriac). Students who take Targumic Aramaic, Syriac, or Coptic should consult with their faculty advisor on how to achieve an intermediate level of language competency within the framework of the major. Students who already have the equivalent of two years' proficiency in the above languages or in another major Islamic or Near Eastern language may petition to satisfy the language requirement with a proficiency examination.

Upper-division major. Before students begin the upper-division major, they are required to meet with their faculty advisor to discuss and have approved their academic plan. With the assistance of the faculty advisor, students will develop a broad, coherent plan which supports both the integrity of the major and their own interests.

A total of 36 upper-division units are required from the following list. At least 4 units must come from section A, 4 units from section B, and 4 units from section C. The balance (24 units) may come from sections A, B, C, D, and E. Students who plan to pursue graduate studies in Islamic or Near Eastern Studies should seriously consider taking at least three upper-division language courses (12 units) from section D.

Section A: Before 600 C.E. Religious Studies 115A, 115B, 117A-B, 129, 130, 131A, 131B.

Section B: 600 C.E. - 1700. Art History 105B, 132A-B-C-D-F; History 119, 119Q, 145A-B, 145Q; Religious Studies 131C, 140A.

Section C: 1700 - present. History 142, 145D, 146A-B, 146P, 146PT, 146T; Political Science 149, 150A, 150B, 150M; Religious Studies 131D, 131G, 131H, 140B-F, 149.

Section D: Upper-division languages. Hebrew (Germanic, Slavic, and Semitic Studies) 115A-B-C, Religious Studies 138A-B-C, 142A-B-C, 148A-B-C, 186.

Section E: General. History 145P, 145Q, 146PW, 146W; Art History 132E; Music A170M (up to 4 units), 175F; Religious Studies 115C, 131J, 140C-D-E, 189A-B-C; Sociology 130, 130ME, 130SA, 131H.

Islamic and Near Eastern Studies Courses

LOWER DIVISION

45. Introduction to Islamic and Near Eastern Studies
(4) STAFF
Same course as History 45.
Exploration of the ancient, medieval, and modern cultures of the Near and Middle East and North Africa, and the religion, music, art, language, and daily life of Muslim societies from Africa to Asia.

UPPER DIVISION

194. Group Studies for Advanced Students
(1-4) STAFF
Prerequisite: upper-division standing.
May be repeated for credit to a maximum of 12

units, but only 8 units may be applied toward the major.

Topics vary according to instructor.

199. Independent Studies
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in the Islamic and Near Eastern Studies; consent of department and instructor.

Students must have a minimum grade-point average of 3.0 for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. INEST 199 may be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major.

Directed research in Islamic and Near Eastern studies.

Jewish Studies

**Global and International Studies Program,
Office of the Provost,
Humanities and Social Sciences 3042;
Telephone (805) 893-7860**

E-mail: gisp@alishaw.ucsb.edu
Web site: www.gisp.ucsb.edu/jewish.htm

Chair: Richard D. Hecht

Jewish Studies Advisory Committee

Susan Derwin, Ph.D. (Germanic, Slavic, and Semitic Studies)

W. Randall Garr, Ph.D. (Religious Studies)

Aharon Gibor, Ph.D. (Professor Emeritus of Biological Sciences)

Richard D. Hecht (ex officio), Ph.D. (Religious Studies)

Barbara A. Holdrege, Ph.D. (Religious Studies)

Wolf D. Kittler (ex officio), Ph.D. (Germanic, Slavic, and Semitic Studies)

Elisabeth Weber, Ph.D. (Germanic, Slavic, and Semitic Studies)

Other Affiliated Faculty

Sheridan Blau, Ph.D. (English)

Carol Braun Pasternack, Ph.D. (English)

Juan Campo, Ph.D. (Religious Studies)

Thomas A. Carlson, Ph.D. (Religious Studies)

Sharon Ann Farmer, Ph.D. (History)

Roger Friedland, Ph.D. (Sociology)

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Albert S. Lindemann, Ph.D. (History)

Harold Marcuse, Ph.D. (History)

Michael O'Connell, Ph.D. (English)

Dwight F. Reynolds, Ph.D. (Religious Studies)

Devora Sprecher, M.A. (Germanic, Slavic, and Semitic Studies)

Ernest Sturm, Ph.D., L.L.B. (French)

The Jewish Studies program provides the possibility for students to complete an interdisciplinary minor in Jewish Studies. Within the minor there is opportunity to study either biblical Hebrew or modern Hebrew, to study the centrality of the Hebrew bible in Jewish history, culture, and society and to explore the literature and society of the Jews and the history and religion of the Jews.

The program also encourages students to take advantage of the Education Abroad Program, especially the Jerusalem Study Center at the Hebrew University. Other Study Centers may also be appropriate for the program.

Undergraduate Program

Minor—Jewish Studies

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Jewish Studies and those offered by other departments and applied to the minor.

Preparation for the minor. Religious Studies 17A-B-C or Hebrew 1, 2, 3, (or equivalent).

Upper-division minor. Twenty-four units, including one course from Religious Studies 115A, Hebrew 111, or English 116A (4 units).

Two courses from Jewish Cultural Studies (8 units): Hebrew 112, 115A-B-C, 119; German 116A, 117, 134, 162, 164E-F-G; Sociology 118J, 131H; Religious Studies 115C, 117A-B, 131J, 131H (same as Sociology 131H), 142 A-B-C; when subject appropriate, by petition only: English 122.

Two courses from History and Religion of the Jews (8 units): Religious Studies 116A, 129, 130, 131A-B-C-D-E-G-I, 131F, 133; History 131F (same as Religious Studies 131F), 131P, 146T, 193B.

One additional course from either of the above lists for Literature and Society of the Jews or the list for History and Religion of the Jews (4 units).

Note: Substitutions and waivers are subject to approval by the chair of the program. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Latin American and Iberian Studies

**Program in Latin American and Iberian Studies,
Division of Humanities and Fine Arts,
Phelps Hall 4206;
Telephone (805) 893-3161**

Program Director: Silvia Bermúdez

Latin American and Iberian Studies Advisory Committee

Silvia Bermúdez, Ph.D. (Spanish and Portuguese)

Kathleen Bruhn, Ph.D. (Political Science)

Sarah Cline, Ph.D. (History)

Francis A. Dutra, Ph.D. (History)

John Foran, Ph.D. (Sociology)

Mario T. Garcia, Ph.D. (History and Chicano Studies)

Maria Herrera-Sobek, Ph.D. (Chicano Studies)

Suzanne J. Levine, Ph.D. (Spanish and Portuguese)

Francisco A. Lomelí, Ph.D. (Spanish and Portuguese and Chicano Studies)

Ellen McCracken, Ph.D. (Spanish and Portuguese)

Sara Poot-Herrera, Ph.D. (Spanish and Portuguese)

Affiliated Faculty

Mark Aldenderfer, Ph.D. (Anthropology)

Ralph Armbruster-Sandoval, Ph.D. (Chicano Studies)

Edwina Barvosa-Carter, Ph.D. (Chicano Studies)

Joao Camilo-Dos-Santos, Ph.D. (Spanish and Portuguese)

Jorge Luis Castillo, Ph.D. (Spanish and Portuguese)

Antonio Cortijo, Ph.D. (Spanish and Portuguese)

G. Reginald Daniel, Ph.D. (Sociology)

Martha Davis, Ph.D. (Black Studies)

Richard Durán, Ph.D. (Graduate School of Education)

Victor Fuentes, Ph.D. (Spanish and Portuguese)

Edward Funkhouser, Ph.D. (Economics)

Carl Gutiérrez-Jones, Ph.D. (English)

Jonathan Inda, Ph.D. (Chicano Studies)

Fernando Lopez-Alves, Ph.D. (Political Science)

Christopher McAuley, Ph.D. (Black Studies)

Timothy McGovern, Ph.D. (Spanish and Portuguese)

Juan Vicente Palerm, Ph.D. (Anthropology)

Giorgio Perissinotto, Ph.D. (Spanish and Portuguese)

Jeanette Favrot Peterson, Ph.D. (History of Art and Architecture)

David P. Rock, Ph.D. (History)

Chela Sandoval, Ph.D. (Chicano Studies)

Katharina Schreiber, Ph.D. (Anthropology)

Susan Stonich, Ph.D. (Anthropology and Environmental Studies)

Ines Talamantez, Ph.D. (Religious Studies)

The Program in Latin American and Iberian Studies offers interdisciplinary training leading to the bachelor of arts and master of arts degrees. The undergraduate program is designed for students broadly interested in the following areas: culture and art, professional careers in business or government, teaching professions in fields such as language or social science, and further academic study of Latin America, Spain, or Portugal.

Latin American and Iberian studies may be taken as part of a double major in combination

with another discipline such as history, anthropology, or economics, subject to an 8-unit limit on overlapping upper-division courses.

Students are encouraged to study abroad in Brazil, Chile, Costa Rica, Mexico, Peru, or Spain through the university's Education Abroad Program. Transfer credit may be given for study at other universities in Latin America, Spain, or Portugal.

Subject to prior approval by the advisory committee, students may receive academic credit for an internship in an international or development agency or other relevant employment. The internship will be done in conjunction with an independent study course supervised by a faculty member.

Honors Program

Seniors who have maintained a 3.6 grade-point average in courses in the major are eligible for the honors program. With approval of the chair, students will select an advisor who will direct the project. In two quarters, the student will pursue research and writing on a topic of importance and complexity, resulting in an honors thesis.

Students with a bachelor's degree in Latin American and Iberian studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Latin American and Iberian Studies Annual Lecture

The advisory committee sponsors an annual lecture by a distinguished visiting lecturer.

Undergraduate Program

Bachelor of Arts—Latin American and Iberian Studies

Preparation for the major. Spanish 6, or Portuguese 6, or a written translation test from Spanish or Portuguese into English. Native-speaking knowledge of the language or credit in courses taken elsewhere demanding a comparable level of proficiency will be considered equivalent. History 8 is a requirement in preparation for the major.

Upper-division major. A minimum of 40 units, including Latin American and Iberian Studies 100, undergraduate proseminar (4 units), at least 16 upper-division units in one of the four areas below, and the other 20 to be distributed among the other three areas, with a minimum of one course in each area.

The program is offering LAIS 101 (counts towards area 1 or area 3), and LAIS 102 (counts towards area 2 or area 4).

Area 1: Social Sciences
Anthropology 104H, 122, 130A-B-C, 133, 134, 135, 137, 141, 148A-B, 150A-B-C, 163, 164, 165, 193, 194, 197; Black Studies 191J; Chicano Studies 115, 120, 130A-B, 131, 138, 139, 140, 141, 144, 154F, 155R-W, 164, 170A-B, 171, 172, 174, 175, 176, 177, 178, 178A, 179, 189, 194; Communication 135; Economics 114, 180, 181, 190; Environmental Studies 122, 130A-B-C; Linguistics 130, 131, 175; Political Science 101, 105, 106AA-ZZ, 109, 134, 147, 148A-B, 174; Portuguese 125A-B; Religious Studies 114B-C-D, 124, 126; Sociology 128, 129, 130, 130LA, 134R, 144; Spanish 118A-B, 119A-B, 150, 176, 177, 178, 180.

Area 2: Art History, Music, and Film
Art History 123A-B-C, 124AA-ZZ, 125A-B, 126AA-ZZ, 130A-B-C-D, 131AA-ZZ; Black Studies 134; Chicano Studies 142, 143, 145, 146, 147, 148, 149, 152, 184C, 185, 186A-B, 188, 189B, 195; Music 175A; Portuguese 128; Spanish 126, 127, 174.

Area 3: History
Chicano Studies 122, 148, 167, 168A-B-E-G-H-P, 169; History 108P, 150A-B-I-P, 151A-B-C-P, 152A-B-C-P, 153, 153L-P, 154A-B-P, 154LA-LB, 155A-B-P, 156A-B, 156P, 156R, 157A-B-C-P, 158, 158L, 158LP.

Area 4: Literature and Language
Chicano Studies 137, 180, 181, 184A-B, 187, 188A-B-C, 190; English 134CH; Portuguese 102A-B, 105A-B-C, 106A-B-C, 113, 114, 115, 120, 132A-B, 150AA-ZZ, 170, 180, 183AA-ZZ, 184AA-ZZ, 185, 189; Spanish 100, 101, 102A-B-C, 103, 104, 105, 106, 107, 109, 110A-B-C-D, 111A-B-C, 112, 114A-B-C, 115A-B, 116, 117, 120A-B, 121, 122A-B, 123A-B, 131, 132, 133, 134, 136, 137A-B, 138, 140A-B, 141, 142A-B, 148, 151, 152, 153, 161, 162, 165, 167, 169, 170, 171, 172, 175, 181, 182, 183AA-ZZ, 184, 185, 187A-B, 188, 189, 190, 191, 192, 194.

Minor—Latin American and Iberian Studies

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in Latin American and Iberian studies and those offered by other departments and applied to the minor.

Preparation for the minor. Spanish 6 or Portuguese 6 or the equivalent* (0-4 units) or a written translation test from Spanish or Portuguese into English; History 8 (4 units).

** Equivalents are defined as native-speaking knowledge of one of these languages or credit in courses demanding a comparable level of proficiency.*

Upper-division minor: Twenty-four upper-division units, distributed as follows:

A. Latin American and Iberian Studies 100 (4 units)

B. Twenty upper-division units with at least one course in each of the following:

Area 1: Social Sciences
Anthropology 104H, 122, 130A-B-C, 133, 134, 135, 137, 141, 148A-B, 150A-B-C, 194, 197; Black Studies 191J; Chicano Studies 115, 120, 130A-B, 131, 138, 139, 140, 141, 144, 154F, 155R-W, 164, 170A-B, 171, 172, 174, 175, 176, 177, 178, 178A, 179, 189, 194; Communication 135; Economics 114, 180, 181, 190; Environmental Studies 122, 130A-B-C; Linguistics 130, 131, 175; Political Science 101, 105, 106AA-ZZ, 109, 134, 147, 148A-B, 174; Portuguese 125A-B; Religious Studies 114B-C-D, 124, 126; Sociology 128, 129, 130, 130LA, 134R, 144; Spanish 118A-B, 119A-B, 150, 176, 177, 178, 180.

Area 2: Art History, Music, and Film
Art History 123A-B-C, 124AA-ZZ, 125A-B, 126AA-ZZ, 130A-B-C-D, 131AA-ZZ; Black Studies 134; Chicano Studies 142, 143, 145, 146, 147, 148, 149, 152, 184C, 185, 186A-B, 188, 189B, 195; Music 175A; Portuguese 128; Spanish 126, 127, 174.

Area 3: History
Chicano Studies 122, 148, 167, 168A-B-E-G-H-P, 169; History 108P, 150A-B-I-P, 151A-B-C-P, 152A-B-C-P, 153, 153L-P, 154A-B-P, 154LA-LB, 155A-B-P, 156A-B, 156P, 156R, 157A-B-C-P, 158, 158L, 158LP.

Area 4: Literature and Language
Chicano Studies 137, 180, 181, 184A-B, 187, 188A-B-C, 190; English 134CH; Portuguese 102A-B, 105A-B-C, 106A-B-C, 113, 114, 115, 120, 132A-B, 150AA-ZZ, 170, 180, 183AA-ZZ, 184AA-ZZ, 185, 189; Spanish 100, 101, 102A-B-C, 103, 104, 105, 106, 107, 109, 110A-B-C-D, 111A-B-C, 112, 114A-B-C, 115A-B, 116, 117, 120A-B, 121, 122A-B, 123A-B, 131, 132, 133, 134, 136, 137A-B, 138, 140A-B, 141, 142A-B, 148, 151, 152, 153, 161, 162, 165, 167, 169, 170, 171, 172, 17, 181, 182, 183AA-ZZ, 184, 185, 187A-B, 188, 189, 190, 191, 192, 194.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to program requirements, candidates for graduate degrees must fulfill the university degree requirements found in the chapter "Graduate Education at UCSB."

Master of Arts—Latin American and Iberian Studies

The M.A. in Latin American and Iberian studies is designed for students wishing to pursue an interdisciplinary degree at the graduate level. Although there is no doctoral program in Latin American and Iberian studies, many successful graduates of the M.A. program pursue doctoral study in traditional academic departments such as anthropology, communication, economics, history, literature, or political science, or enter professional schools to study business administration, education, law, or public health. The broad, interdisciplinary nature of the program allows students a great deal of scope to define and develop special interests.

Admission

In addition to program requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Completion of the undergraduate major in Latin American and Iberian Studies is desirable but not necessary. Undergraduate deficiencies as stipulated by the Latin American and Iberian Studies committee must be remedied within the first year and do not count toward the minimum course requirements for completion of the M.A.

Language Requirement

A strong reading knowledge of Spanish or Portuguese is required. The student must show proficiency in either language through courses taken or through a reading examination. It is expected that the candidate will satisfy this requirement during the first quarter of the graduate program. In no case may a student

take the comprehensive examination or submit a thesis until the foreign language requirement has been met.

Degree Requirements

Students will plan their programs with an advisor in their major area of concentration, selected from the affiliated faculty and with the approval of the chair.

All graduate students are required to take the proseminar in Latin American and Iberian studies. The course has two purposes. It is designed (1) to provide a broad overview of the fields available at UCSB; and (2) to provide insight into the particular interests and approaches of the faculty who teach Latin American and Iberian courses at UCSB. The presentations by UCSB faculty will allow graduate students to select an advisor and to find promptly an area of interest for their continued studies in the program.

Two M.A. plans are available. Under Plan 1 (thesis), at least 32 units of upper-division and graduate coursework in Latin American and Iberian studies plus a thesis (6 additional units, Latin American and Iberian Studies 598) are required. The 32 units must include no fewer than 20 units of graduate courses numbered between 200 and 299 or 596, with a maximum of 8 units of 596 coursework being eligible to count toward the master's degree. The distribution of units should be 16 units in the major area (department) of concentration, 8 units in the second area of concentration, and the remaining 8 units from two other areas. Students wishing to write a thesis must carefully prepare a proposal, including provisions for funding of any field research. The thesis proposal must be approved by a thesis committee. The final draft of the thesis itself must be approved by that committee, and by the chair of Latin American and Iberian studies.

Under Plan 2 (comprehensive examination), at least 36 units of upper-division and graduate coursework in Latin American and Iberian studies are required, including no fewer than 24 units of graduate courses numbered between 200 and 299 or 596, with a maximum of 8 units of 596 coursework being eligible to count toward the master's degree. Distribution of courses should be 16 units in one area (department), 12 units in a second area, and the remaining 8 units in two other areas. A comprehensive two-part examination will be required, based on coursework and on a reading list previously approved by the advisors in consultation with the chair. In both M.A. tracks, a grade of B or better is required for each course to count toward the master's degree.

Graduate Courses in the M.A. Program

Anthropology 209, 218, 225, 235, 236, 237B, 238; Art History 254, 262A-B-C, 254; Communication 235; Economics 214A-B, 280A-B; Education 270A-D-G-H, 274; History 200LA, 201LA, 249A-B, 250, 252, 253, 254, 256, 257, 268A-B; Latin American and Iberian Studies 200 (proseminar); Linguistics 240; Music 274A; Political Science 282A-B; Portuguese 205A-B-C, 206A-B-C, 221A-B, 222, 232A-B, 240, 245, 250, 255, 260, 265, 283, 294A-B, 295A-B; Sociology 265, 265LA; Spanish 200, 202, 207, 209, 210A-B-C, 211A-B-C, 212A-B, 213, 214, 218, 221A-B, 222A-B, 224A-B, 230A-B-C-D-E-F, 240A-B, 245, 260, 270, 275, 280, 283, 285, 290, 294A-B, 295A-B, 296A-B.

Latin American and Iberian Studies Courses

LOWER DIVISION

10. Introduction to the Latin American and Iberian World
(4) STAFF

Introduction to issues, debates, and approaches in the study of Latin America, Spain and Portugal, and the Latino world, from an interdisciplinary perspective. Topics considered include history, culture, society, and literature from various places and times.

UPPER DIVISION

100. Proseminar
(4) STAFF

Prerequisite: upper-division standing.

Required for all majors in the program.

Designed to acquaint students with current research on the main areas of Latin American and Iberian studies.

100H. Proseminar—Honors Section
(1) STAFF

Prerequisites: concurrent enrollment in LAIS 100; honors standing in LAIS or the College of Letters and Science.

Eligible students are invited to enroll in the honors seminar which will generally be taught by the course instructor.

101. Interdisciplinary Approaches to the History and Societies of Latin America and Iberia
(4) STAFF

Prerequisite: upper-division standing.

Issues central to the study of Latin America and Iberia across the social sciences and history. Topics may include nationalism, revolution, politics and the state, economic development and international relations, labor, popular culture, race, gender, religion, migration, environment, imperialism, and colonialism.

102. Interdisciplinary Approaches to the Cultures, Languages, and Literatures of Latin America and Iberia
(4) STAFF

Prerequisite: upper-division standing.

Issues pertinent to the diverse cultures, languages, and literatures of Latin America and Iberia. Disciplines and approaches may include: pre-Columbian studies; Spanish and Spanish American literatures; Portuguese and Brazilian literatures; translation studies; cultural, gender, and queer studies; Romance language and linguistics.

190. Senior Seminar
(4) STAFF

Prerequisites: senior standing; LAIS majors only.

Exploration of issues of Latin America and Iberian Studies at an advanced level, including the interdisciplinary approach, the full geographical range of LAIS, and student's experiences abroad, culminating in a substantial research paper.

194AA-ZZ. Special Topics in Latin American and Iberian Studies
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 20 units provided letter designations are different, but only 12 units may be applied toward the major.

Special topics in an area of faculty expertise. Specific course titles to be announced by the program each quarter. May be offered in English, Spanish, or Portuguese. See LAIS program office for information.

195A-B. Senior Honors Thesis
(4-4) STAFF

Prerequisites: admission to honors program; consent of department.

Students must have a 3.6 grade-point average for courses in Latin American and Iberian studies. A two-quarter in-progress sequence course with grades for all quarters issued upon completion of Latin American and Iberian studies 195B.

Individual study with the advisor for the purpose of writing a major interdisciplinary research paper on a topic of sufficient depth and sophistication.

195G. Senior Honors Thesis Group Studies
(4) STAFF

Prerequisites: admission to honors program; consent of department.

Students must have a 3.6 grade-point average for courses in Latin American and Iberian studies.

Students learn the mechanics of formulating a research problem, choose a faculty advisor, and submit a project proposal.

196. Internship
(2-8) STAFF

Prerequisites: concurrent enrollment in Latin American Iberian Studies 199; upper-division standing; consent of department.

Student must have a 3.0 grade-point average. The course is graded P/NP.

The course enables students to obtain credit for Latin American- or Iberian-related internship experience.

199. Independent Studies
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Latin American & Iberian Studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit to a maximum of 8 units.

The description of any one 199 must not be identical to any existing course description.

GRADUATE COURSES

200. Proseminar
(4) STAFF

Required for all graduate students in the program.

Designed to acquaint students with current research on the main areas of Latin American and Iberian studies as well as the faculty associated with the program.

202. Interdisciplinary Approaches to the Cultures, Languages, and Literatures of Latin America and Iberia
(4) STAFF

Prerequisite: graduate standing.

Issues pertinent to the diverse cultures, languages, and literatures of Latin America and Iberia; disciplines and approaches may include pre-Columbian studies; Spanish and Spanish American literatures; Portuguese and Brazilian literatures; translation studies; cultural, gender, and queer studies; Romance language and linguistics.

203. Interdisciplinary Approaches to the History and Societies of Latin American and Iberia
(4) STAFF

Prerequisite: graduate standing.

Issues central to the study of Latin America and Iberia across the social sciences and history. Topics may include nationalism, revolution, politics and the state, economic development and international relations, labor, popular culture, race, gender, religion, migration, environment, imperialism, and colonialism.

293A. Social Science Interdisciplinarity in Latin American and Iberian Studies
(4) STAFF
Prerequisite: graduate standing.
This seminar will ground students' ability to synthesize the insights of anthropology, economics, political science, and sociology through intensive discussion of representative works that span these disciplines and of the methodological, theoretical, and empirical issues involved in doing such synthetic work.

293B. Cultural Studies Interdisciplinarity in Latin American and Iberian Studies
(4) STAFF
Prerequisite: graduate standing.
Exploration of Latin American and Iberian cultural studies as a discipline. By emphasizing that culture is a plural set of possibilities moving in different directions, students will pay special attention to the ways in which forms of cultural production participate in the construction and deconstruction of national, regional, class, and gender identity.

293C. Historical Studies Interdisciplinarity in Latin American and Iberian Studies
(4) STAFF
Prerequisite: graduate standing.
Focus on approaches to combining the study of history with the humanities and social sciences to better understand the Latin American and Iberian worlds.

293D. Languages and Literatures Interdisciplinarity in Latin American and Iberian Studies
(4) STAFF
Prerequisite: graduate standing.
Interdisciplinary in its approach, the seminar provides the context for the understanding and appreciation of the languages and literatures of the Hispanic and Luso-Brazilian worlds as unique cultural expressions emanating from the social and political conditions that prevail in diverse historical periods.

294AA-ZZ. Special Topics in Latin American and Iberian Studies
(4) STAFF
Seminars or lectures on special topics in an area of faculty expertise. May be offered in English, Spanish, or Portuguese. Specific course titles to be announced by the program each quarter.

S96. Directed Reading and Research
(2-4) STAFF
Prerequisite: graduate standing
Individual independent study which could include work with the Education Abroad Program. A written proposal for each tutorial must be approved by student's program advisor and by the department chair. The number of units that a student may take depends on the nature of the program and the consent of the advisor or the graduate committee.

S97. Individual Study for M.A. Comprehensive
(2-8) STAFF
Prerequisite: graduate standing.
No unit credit allowed toward advance degrees.
Individual study for M.A. comprehensive. Instructor should be student's major professor or chair of advisory committee.

S98. Master's Thesis Research and Preparation
(1-6) STAFF
Prerequisites: fulfillment of all graduate requirements except the thesis.
Only for research and writing of the thesis, under the direction of a faculty member in the program and with the approval of the chair.

Law and Society

Law and Society Program,
Division of Social Sciences,
Ellison Hall 1832;
Telephone (805) 893-2318
Fax (805) 893-5532
E-mail: lawso@sscf.ucsb.edu
Web site: www.lawso.ucsb.edu
Program Chair: vacant

Law and Society Advisory Committee and Affiliated Faculty

Randolph E. Bergstrom, Ph.D. (History)
Gayle Binion, Ph.D. (Political Science)
Eve Darian-Smith, Ph.D. (Anthropology)
William Felstiner, J.D. (Law and Society)
Sarah Fenstermaker, Ph.D. (Sociology)
Laura Kalman, Ph.D. (History)
Llad Phillips, Ph.D. (Economics)
John R. Sutton, Ph.D. (Sociology)
Juliet Williams, Ph.D. (Law and Society, Women's Studies)

The law and society major seeks to understand the nature of law and legal institutions from a variety of perspectives. The program is interdisciplinary, and is designed to benefit both the student who desires a liberal education and the student who intends to enter graduate or law school.

In addition to the basic major, the program offers an emphasis in criminal justice, stressing the study of criminal justice as a social science. The criminal justice emphasis is supplemental to the basic major and requires an additional 12 units of upper-division coursework. Successful candidates will have the emphasis noted on their transcripts. The law and society undergraduate advisor is available on a regular basis to assist students with questions related to all academic matters, including the honors program.

Graduates of the law and society major have entered careers ranging from urban planning, court management, probation, counseling, and legal practice, to federal, state, and local government service. Many professional programs are open to law and society majors, including advanced degree programs in the social sciences and judicial administration, as well as law school and paraprofessional legal training.

Students with a bachelor's degree in law and society who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Honors Program

The law and society honors program is open to seniors with a minimum 3.5 grade-point average. Students who successfully complete a series of honors classes and an honors thesis

John Sutton
PROFESSOR, SOCIOLOGY

Sociology professor John Sutton likes to muddy the waters, particularly for his undergraduate students.

Sutton teaches undergraduate courses in the sociology of law, deviance, culture, and organizations and graduate seminars in re-search methods.

"What I hope students gain is some disciplined critical thinking skills and a willingness to challenge their taken-for-granted assumptions about the world."

"What I hope students gain is some disciplined critical thinking skills and a willingness to challenge their taken-for-granted assumptions about the world."

Sutton was drawn to sociology when he was a graduate student in religion. "I discovered I didn't want so much to do speculative kinds of things. I didn't want to spend my life trying to discover the perfect ethical system. I wanted to understand how people develop their own ideologies about life and how those ideologies are related to behavior."

and maintain the minimum required grade-point average will graduate with Distinction in the Major.

Undergraduate Program

Bachelor of Arts—Law and Society

Students are not admitted directly into the law and society major. Instead, they are first admitted to the pre–law and society major, and they may advance to full major standing only after fulfilling all the pre-major courses and grade requirements listed below. Completion of the pre-major courses does not fully satisfy the preparation for the major. Also note that acceptance into the pre-major does not guarantee admission to full major status. Students may declare a pre–law and society major after they have completed at least two courses from the pre-major courses with a 2.5 grade-point average or above.

Preparation for the major. Students must complete all the pre-major courses with a combined grade-point average of 2.5. The pre-major courses are Law and Society 1, 2, and 2L (must be taken in conjunction with 2); Anthropology 2; Political Science 12; Sociology 1; and one course in statistics selected from PSTAT 5AA-ZZ, or Sociology 3, or Psychology 5.

Transfer students should consult the undergraduate advisor in the Law and Society Program.

To complete the preparation for the major, students must also complete four courses selected from the following, with no more than one from each discipline: Asian American Studies 1; Black Studies 6, 20; Communication 1, 89; Economics 1, 2; History 4A-B-C, 17A-B-C; Philosophy 4, 7; Psychology 1; Religious Studies 8, 40; and Women's Studies 20, 30, 60. These courses are not used in calculating the required 2.5 pre-major grade-point average, but they do apply to the overall major grade-point average.

Upper-division major. Forty-four upper-division units are required, distributed as follows:

A. *Core courses:* Twenty units. Anthropology 170, Law and Society 100, 173, 180, and Political Science 115.

B. *Elective courses:* Twenty-four units from the following, with at least 12 units from Law and Society: Law and Society 140, 146, 150, 160, 170, 174, 181, 182, 190AA-ZZ, 192 (maximum of 8 units), 194AA-ZZ, 195, 196A-B-C, 199 (maximum of 4 units); Anthropology 115; Chicano Studies 164, 172; Communication 132, 170; Economics 117A, 160; Environmental Studies 124, 125A, 126A; French 108X, 130X, 132X, 134A; History 166LA, 166LB, 178M; Philosophy 100A, 122, 143, 144, 145; Political Science 117, 125, 165, 166, 167, 168; Psychology 102, 103; Religious Studies 141C, 177; Writing 109L.

Up to 8 units of Law and Society 192, which is offered only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts—Law and Society—Criminal Justice Emphasis

Students are not admitted directly into the law and society major with a criminal justice emphasis. Instead, they are first admitted to the pre–law and society major with a criminal justice emphasis, and they may advance to full major standing only after fulfilling all the pre-major courses and grade requirements listed below. Note that acceptance into the pre-major does not guarantee admission to full major status. Students may declare a pre–law and society major with a criminal justice emphasis after they have completed at least two courses from the pre-major courses with a 2.5 grade-point average or above.

Preparation for the major. Students must complete all the pre-major courses with a combined grade-point average of 2.5 or better before petitioning the program to change from pre-major to major status. The pre-major courses for the criminal justice emphasis are Law and Society 1, 2, and 2L (must be taken in conjunction with 2); Anthropology 2; Economics 1 and 2 or Economics 109; Political Science 12; Psychology 1; Sociology 1; and one course in statistics selected from PSTAT 5AA-ZZ, or Sociology 3, or Psychology 5.

Transfer student should consult the undergraduate advisor in the Law and Society Program.

Upper-division major. Fifty-six upper-division units required, distributed as follows:

A. *Core courses:* Twenty units. Anthropology 170, Law and Society 100, 173, 180, and Political Science 115.

B. *Criminal Justice courses:* Sixteen units selected from Chicano Studies 164; Economics 160; French 108X; History 178M; Law and Society 174; Philosophy 145; Political Science 165; Psychology 103.

C. *Elective courses:* Twenty units selected from the following with at least 12 from Law and Society: Law and Society 140, 146, 150, 160, 170, 181, 182, 190AA-ZZ, 192 (maximum of 4 units), 194AA-ZZ, 195, 196A-B-C, 199 (maximum of 4 units); Anthropology 115; Black Studies 168; Chicano Studies 172; Communication 132, 170; Economics 117A; Environmental Studies 124, 125A, 126A; French 130X, 132X, 134A; History 166LA, 166LB; Philosophy 100A, 122, 143, 144; Political Science 117, 125, 165, 166, 167, 168; Psychology 102; Religious Studies 141C, 177; Writing 109L; or any course from the Criminal Justice courses above not used to fulfill that requirement.

Up to 4 units of Law and Society 192, may be taken pass/not passed for major credit; all other course must be taken for letter grades.

Law and Society Courses

LOWER DIVISION

1. Introduction to Law and Society
(4) STAFF
Recommended preparation: Sociology 1 or 101, Political Science 12 or 100, Philosophy 3.
The course is a prerequisite for study in the major.
An introduction to the interdisciplinary study of the law. Preparation for and introduction to the law and society major. Introduction to the issues, principles, and approaches involved in future studies in an interdisciplinary program.

2. Socio-Legal Research Methods
(3) STAFF
Prerequisite: Law and Society 1; concurrent enrollment in Law and Society 2L.
A survey of social science research methods commonly used in the study of law and society. The relationship between legal and social theory and research methodology will be explored. Experimental, survey, field, archival and observational methods will be analyzed.

2L. Socio-Legal Research Methods Laboratory
(1) STAFF
Prerequisites: Law and Society 1; concurrent enrollment in Law and Society 2.
Practice in methods, techniques, and typical empirical research in law and society.

UPPER DIVISION

100. American Law
(4) STAFF
Lawyers, judges, and courts. Civil and criminal procedure. Problem areas of the law.

115. The American Judicial Process
(4) BINION
Legal institutions in the United States, including the role of judges, lawyers, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions.

140. Gender and the Law
(4) BINION
Prerequisites: Political Science 115; upper-division standing.
Introduction to historical and contemporary relationships between gender and law, including debates about the rights, responsibilities, benefits, etc., of men and women under law.

146. Lawyers and the Legal Profession
(4) FELSTINER
Prerequisites: Law and Society 1, 2, and 173.
Extensive readings and discussion about theories of the legal profession, history and current structure of law firms and solo practice, gender dimensions of legal education and practice, and relationships with clients.

150. Alternative Dispute Resolution
(4) STAFF
Prerequisite: upper-division standing.
An introduction to the principles and methods of conflict resolution alternatives, including negotiation, mediation, conciliation, arbitration, and formal adjudication. Domestic, comparative, and international aspects.

160. Comparative Law
(4) STAFF
Prerequisite: upper-division standing.
An analysis of the structures, processes and principles of different kinds of legal systems. Focus of the course is on public and constitutional law and special attention is paid to the contrast between common law and civil law countries.

170. Media Law
(4) LINZ
Prerequisite: Law and Society 1.
A survey of a broad range of freedom of expression issues, including the history of the development of free speech rights, libel, invasion of privacy, obscenity, commercial speech, broadcasting, and other legal restrictions on mass media and news gathering.

173. Law and American Society
(4) FELSTINER
Prerequisites: Law and Society 1, 2, and 2L.
Introduction to the different functions allegedly performed by law in America including law as instrument, social control, symbol, conspiracy, violence, meaning and dispute resolution.

174. Criminal Justice and Society
(4) FELSTINER
Prerequisite: Law and Society 1.
Not open for credit to students who have completed Law and Society 194CJ.
A critical, sociological analysis of the major components of the criminal justice system in the U.S. Focus on police and police violence, prosecutors and defense counsel, trial and juries, sentencing, prison and post-prison supervision.

180. Law and Social Science
(4) LINZ
Prerequisites: Law and Society 1 and 2.
The American legal system uses social science research in three distinct ways: to make law, to determine facts, and to provide context. This course will review and critique these uses of social research in U.S. courts.

181. Psychology and the Legal System
(4) LINZ
Prerequisites: Law and Society 1 and 2.
Course applies theory and research to examine selected legal processes, institutions, and actors. Analysis of the assumptions inherent in police selection and functioning, jury decision making, prediction of dangerousness, insanity, and competence to stand trial.

182. Juries and Justice
(4) LINZ
Course uses an interdisciplinary approach to examine historical development of the jury system, the goals, processes, and dilemmas of jury selection, and theories and research on jury decision making. Analysis of the impact of extralegal factors on jury verdicts.

190AA-ZZ. Honors Seminar in Law and Society
(4) STAFF
Prerequisites: Law and Society 173; Political Science 115; Philosophy 100A; senior standing; open to law and society majors only.
Students must have a 3.2 minimum grade-point average. May be repeated for credit to a maximum of 12 units provided letter designations are different.
Honors seminar on selected topics in law and society. A research paper will be required.

192. Field Research in Law and Society
(1-8) LINZ
Prerequisites: upper-division standing; consent of instructor.
Students must be in good academic standing, May be repeated for credit to a maximum of 8 units.
Field research for students who seek greater understanding of the legal system through participant observation as an intern in a law-related agency. Depending upon the project, students may be required to work up to 40 hours per week. A research paper will be required.

194AA-ZZ. Advanced Topics in Law and Society
(4) STAFF
Prerequisites: Law and Society 1; Political Science 115; and Law and Society 173.
May be repeated for credit to a maximum of 12 units provided letter designations are different. Letter-grade required for majors.
Advanced topics of special importance in law and society.

195. Junior Honors Seminar
(4) LINZ
Prerequisite: junior standing.
Students must have a 3.5 cumulative grade-point average.
Seminar covering methodological, theoretical, and procedural issues involved in undertaking a senior thesis.

196A-B-C. Senior Honors Thesis
(2-2-2) LINZ
Prerequisites: Law and Society 195; open to senior honor students only.
A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Law and Society 196C.

199. Independent Studies in Law and Society
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in law and society.
Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Admission by special consent only. For majors; no more than 4 units may count toward completion of the major requirements.

Linguistics

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E-mail: spoonero@humanitas.ucsb.edu
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Department Chair: Carol Genetti

Faculty

Patricia M. Clancy, Ph.D., UC Berkeley, Associate Professor (language acquisition, psycholinguistics, discourse, Japanese and Korean linguistics)

Susanna A. Cumming, Ph.D., UC Los Angeles, Associate Professor (discourse analysis, computational linguistics, Western Austronesian linguistics)

John W. Du Bois, Ph.D., UC Berkeley, Associate Professor (discourse, sociocultural linguistics, Mayan linguistics)

Carol E. Genetti, Ph.D., University of Oregon, Associate Professor (Tibeto-Burman linguistics, phonology, syntax, language change, language contact)

Matthew Gordon, Ph.D., UC Los Angeles, Assistant Professor (phonetics, phonology, typology, American Indian and Finno-Ugric linguistics)

Charles N. Li, Ph.D., UC Berkeley, Professor (historical syntax, Chinese linguistics, minority languages of China, language contact)

Marianne Mithun, Ph.D., Yale University, Professor (morphology, language change, discourse and grammar, language typology, American Indian linguistics, Austronesian linguistics)

Arthur Schwartz, Ph.D., University of Wisconsin, Professor (syntax, language and gender, language acquisition)

Sandra A. Thompson, Ph.D., Ohio State University, Professor (discourse and grammar, language universals, Chinese linguistics)

Emeriti Faculty

Wallace L. Chafe, Ph.D., Yale University, Professor Emeritus (American Indian linguistics, discourse, spoken and written language)

C. Douglas Johnson, Ph.D., UC Berkeley, Associate Professor Emeritus (phonology, historical linguistics, Arabic linguistics)

Affiliated Faculty

William Ashby, Ph.D. (French and Italian)

Dorothy Chun, Ph.D. (Germanic, Slavic, and Semitic Studies)

Martha Davis, Ph.D. (Black Studies)

W. Randall Garr, Ph.D. (Religious Studies)

Howard Giles, Ph.D. (Communication)

Gene Lerner, Ph.D. (Sociology)

Eduardo Raposo, Ph.D. (Spanish and Portuguese)

Linguistics is the study of human language, including the study of similarities and differences among languages of the world; the scientific inquiry into the structure of language, including sound structures, word structures, and sentence structures; the study of how language conveys meaning; the study of the way languages change over time; the study of how languages are learned; and the study of the relationship between language, culture, and society. These concerns have relevance to many other fields. The B.A. in linguistics provides a useful background, not only for advanced work in linguistics itself, but also for graduate study in anthropology, law, sociology, language disorders, cognitive science, speech technology, artificial intelligence, psychology, philosophy, education, and foreign languages.

Students with a bachelor's degree in linguistics who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

A certificate in English as a Second Language may be earned at another institution with approximately one year of additional study, opening the possibility of teaching in a variety of domestic and international programs in English as a Second Language.

The name of the undergraduate faculty advisor is available in the department office. In addition, all faculty members are available for advising students. A list of courses offered is available each quarter, prior to registration.

Students who wish to declare one of the majors in the Department of Linguistics will be required to have a minimum 2.0 grade-point average in required linguistics courses before approval is granted.

Honors Program in Linguistics

Majors with a minimum 3.5 grade-point average in linguistics courses are eligible to join the honors program during their senior year. The honors program consists of an independent research project carried out under the supervision of a faculty member, earning 6 units of Linguistics 195 over two or three quarters. The goal of the project is to write an original, publishable research paper. The project can be on a topic of the student's choice, or it can be an extension of Linguistics 121A-B-C (Field Methods). Students successfully completing the program will be eligible for graduation with Distinction in the Major. Application to the program should be made to the undergraduate advisor of the Department of Linguistics early in the first quarter of the senior year.

Undergraduate Program

Bachelor of Arts—Linguistics

Preparation for the major. Linguistics 20. The completion of six quarters (or equivalent) in one foreign language plus the completion of three quarters (or equivalent) in a second foreign language. Students are encouraged to take at least one language outside the Indo-European family; however, the study of two Indo-European languages will satisfy this requirement provided both are not members of the same branch of family (Germanic, Slavic, Romance). Native speakers of languages other than English may count either English or their native language as fulfilling one of the language requirements.

Upper-division major. Forty upper-division units in linguistics, including Linguistics 106, 108, 109, 111, and 115; and one of the following: Linguistics 113, 124, or 137. The remaining four courses are electives to be chosen from the other linguistics course offerings.

Students are encouraged to take as an elective Linguistics 101 before enrolling in Linguistics 108, 109, 111, or 115.

Bachelor of Arts—Linguistics—Sociocultural Emphasis

Preparation for the major. Linguistics 20, 50, 70. The completion of six quarters (or equivalent) in one foreign language plus the completion of three quarters (or equivalent) in a second foreign language. Native speakers of languages other than English may count either English or their native language as fulfilling one of the language requirements.

Lower-division recommendations: Black Studies 10, Religious Studies 14.

Upper-division major. Forty-four upper-division units distributed as follows: Linguistics 106, 108, 109, 111, 113, 130, 132; two courses chosen from: Sociology 136, Linguistics 124, 137, 170, 180; two upper-division courses in linguistics or chosen from the following: Chicano Studies 131, French 102, 115, German 104, 112D, Religious Studies 114C.

Bachelor of Arts—Linguistics—Chinese Emphasis

Preparation for the major. Linguistics 20, Chinese 1-6. In addition, the completion of the third quarter of a second foreign language is also required.

Upper-division major. Forty-eight upper-division units in linguistics and Chinese, distributed as follows: Linguistics 106, 108, 109, 111, 115. For the classical Chinese track: Chinese 101A-B-C and one course from the following: Chinese 115A, 132A, 150, 166F, 166G, 166H. For the modern Chinese track: Chinese 122A-B-C and one course chosen from Chinese 105, 111, 115, 120, 121, 124A-B, 125, 132B. Three additional upper-division courses in linguistics, to bring the unit total to 48.

Bachelor of Arts—Linguistics—English Emphasis

Preparation for the major. Linguistics 20. The completion of six quarters (or equivalent) in one foreign language plus the completion of three quarters (or equivalent) in a second foreign language. Students are encouraged to take at least one language outside the Indo-European family; however, the study of two Indo-European languages will satisfy this requirement provided both are not members of the same branch of family (Germanic, Slavic, Romance). Native speakers of languages other than English may count either English or their native language as fulfilling one of the language requirements.

Upper-division major. Forty-eight upper-division units in linguistics and English, distributed as follows: Linguistics 106, 108, 109, 111, 113, 115, 160; English 111; one course from English 110A, 110B, 115, 119, 152A, 152B; one course from English 104A, 104B, 104C, 157, 160. Two additional upper-division courses in linguistics, to bring the unit total to 48.

Bachelor of Arts—Linguistics—French Emphasis

Preparation for the major. Linguistics 20 and French 1-6, and 26. In addition to the French language requirement, the completion of the third quarter of a second foreign language is required. Students are encouraged to select a non-Indo-European language for this second language requirement; however, an Indo-European language will satisfy this requirement provided it is not a member of the Romance branch.

Upper-division major. Forty-eight upper-division units in linguistics and French, distributed as follows: Linguistics 106, 108, 109, 111, 113, 115; two courses chosen from: French 102, 103, 104A *or* 104B, 105, 107, 111, 112, 115, 116; three courses from those French courses listed just prior (if not used in the requirement above) and additional course choices of French 113 *or* 113X, 136A, 136B, 136C, 140A, 140B, 140C. One additional upper-division course in linguistics.

Bachelor of Arts—Linguistics—German Emphasis

Preparation for the major. Linguistics 20, German 1-6. In addition to the German language requirement, the completion of the third quarter of a second foreign language is required. Students are encouraged to select a non-Indo-European language for this second language requirement; however, an Indo-European language will satisfy this requirement provided it is not a member of the Germanic branch.

Upper-division major. Forty-eight upper-division units in linguistics and German, distributed as follows: Linguistics 106, 108, 109, 111, 115; German 101A, 103 *or* 104 *or* 112D, 120; one course from those German courses listed just prior (if not used in the requirement above) and additional course choices of German 101B, 101C, 110A, 110B, 110C, 112A, 112C. Three additional upper-division courses in linguistics.

Bachelor of Arts—Linguistics—Japanese Emphasis

Preparation for the major. Linguistics 20, Japanese 1-6 and 120A-B-C. In addition, the completion of the third quarter of a second foreign language is also required.

Upper-division major. Forty-eight upper-division units in linguistics and Japanese, distributed as follows: Linguistics 106, 108, 109, 111, 115; Japanese 101A, 170; two courses from Japanese 101B-C, 126, 198. Three additional upper-division courses in linguistics.

Bachelor of Arts—Linguistics—Slavic Emphasis

Preparation for the major. Linguistics 20, Slavic 1-6. In addition, the completion of the third quarter of a second foreign language is required. Students are encouraged to select a non-Indo-European language for this second language requirement; however, and Indo-European language will satisfy this requirement provided it not a member of the Slavic branch.

Upper division major. Forty-eight units of upper-division work, distributed as follows: Linguistics 106, 108, 109, 111, 115; Slavic 101A; four courses selected from: Slavic 101B-C, 106, 108, 109, 145, 163, 197, 198, 199, and two additional upper-division courses in linguistics.

Bachelor of Arts—Linguistics—Spanish Emphasis

Preparation for the major. Linguistics 20, Spanish 1-6, 30. In addition to the Spanish language requirement, the completion of the third quarter of a second foreign language is required. Students are encouraged to select a non-Indo-European language for this second language requirement; however, an Indo-European language will satisfy this requirement provided it is not a member of the Romance branch.

Upper-division major. Forty-eight units of upper-division courses in linguistics and Spanish, distributed as follows: Linguistics 106, 108, 109, 111, 113, 115, 180; Spanish 100 (prerequisite to all upper-division Spanish linguistic courses); 114A *or* 114B *or* 114C; Spanish 103 *or* a second course from the Spanish 114A-B-C series not already used; and two courses from Spanish 101, 106, 107, 109, 121.

Minor—Linguistics

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in linguistics and those offered by other departments and applied to the minor.

Preparation for the minor. Linguistics 20 (with a grade of C or better).

Upper-division minor. Twenty-four units, distributed as follows: Linguistics 106 (Phonetics), 108 (Morphology), 109 (Syntax), 111 (Phonology); 8 units of upper-division electives in linguistics (recommended: Linguistics 113, 115, 124).

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Sociocultural Linguistics

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in linguistics and those offered by other departments and applied to the minor.

Preparation for the minor. Linguistics 20 (with a grade of C or better).

Recommended: Linguistics 70

Upper-division minor. Twenty-four units, including four of the following six courses: Linguistics 103 (Bilingualism), Linguistics 113 (Semantics), 130 (Language and Culture), 132 (Sex Roles and Language), 170 (Language in Social Interaction), 180 (Language in Ethnic Minority Groups); 8 units of upper-division electives in linguistics.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must fulfill the university degree requirements found in the chapter "Graduate Education at UCSB."

M.A./Ph.D. in Linguistics

The linguistics program focuses on the discovery of general, theoretically significant explanations of why languages are structured as they are, why they change as they do, and in what ways linguistic structures are shaped by the nature of the communication process. A major goal is the pursuit of what are often called "functional" explanations for linguistic patterns, explanations that are based on the functions of language as a contextualized social and cognitive activity. Students are encouraged to seek both breadth and depth in their understanding of a wide sample of languages and to appreciate the ways languages can differ as well as the features they share.

Admission

The M.A. program in linguistics is oriented toward the Ph.D. program and is viewed as an integral part of preparation for the doctorate; students normally apply to both programs. Students intending to pursue only an M.A. degree will not be accepted into the graduate program.

Students entering the graduate program in linguistics typically have completed with a minimum grade-point average of 3.5 the equivalent of a linguistics B.A. or the equivalent of a linguistics minor with a major in a related area, such as anthropology, psychology, or a language. The recommended courses for admission are an introductory course in linguistics and at least one course each in phonetics/phonology, historical/comparative linguistics, and syntax.

Students who do not already have a master's degree should apply to the M.A./Ph.D. program; those with an M.A. degree should apply directly to the Ph.D. program.

Admitted students for whom English is not their native language must take the English Language Placement Examination upon arrival at UCSB to determine speaking and writing ability. Depending on test performance, students may be required to take courses in English as a Second Language.

Master of Arts—Linguistics

The M.A. program takes approximately seven quarters. The student is required to complete nine courses with sufficient distinction and to maintain an overall grade-point average of 3.0 or better. The nine courses must include Linguistics 208 (Morphology), Linguistics 212 (Transcription and Analysis of Spoken Discourse), Linguistics 214 (Discourse), Linguistics 225 (Semantics), Linguistics 234 (Syntax), Linguistics 235 (Phonology), and Linguistics 236 (Advanced Language Change). The other two courses may be chosen from the full list of graduate courses in linguistics.

After completing the required courses, the student will submit a thesis based on original research to the thesis committee for approval. The committee, consisting of at least three faculty members nominated by the department chair and approved by the dean of the Graduate Division, is to be established at least one quarter prior to the quarter in which the thesis is submitted, and is responsible for its final approval. The length of the M.A. thesis will not in general exceed 60 double-spaced pages (including footnotes and bibliography).

The foreign language requirement. Students must demonstrate knowledge of one research language before receiving an M.A. and a second research language before advancement to candidacy for the Ph.D. A research language is a language with substantial relevant literature on linguistics. Knowledge can be demonstrated by one of the following methods of examination within the student's area of interest: (1) English translation of a 500-word passage, chosen by the examiner, to be produced within one and a half hours with the aid of a dictionary and with no more than 8 points of erroneous comprehension (2 points for each major error significantly affecting meaning; 1 point for each minor error). (2) A 1000-1,500 word English summary, written over a single weekend, of a substantial linguistic article chosen by the examiner. The faculty member in charge of exams for a particular language will specify a sample of material comparable to what can be expected on the exam. Translation and summary exams may be taken in May or October on a date to be set by the examiner. (3) A research paper that not only independently fulfills a course or degree requirement but also contains copious references to linguistic literature in the foreign language of interest, with the understanding that the works referred to shall be lent to the examiner for verification.

A student may petition to substitute a contact language (a language to be used as a medium of communication in the field) for one of the two foreign languages in this requirement. Knowledge will be demonstrated by a conversation showing ability to use the foreign language for research purposes.

Whichever type of examination is chosen, the student should realize that its acceptance depends upon the availability of a qualified person to judge the result. It is the student's responsibility to find such a person. A student who fails a foreign language exam must wait three months before taking it again. Language examinations are administered twice a year, in October and May. Students planning to take an exam must fill out a language exam application form at least two weeks before the exam is to be given.

Doctor of Philosophy—Linguistics

Permission to continue for the Ph.D. is contingent upon passing the screening review, which takes place at the time of the completion of the M.A. for students who entered the M.A./Ph.D. program, and at a time specified by the student's advisory committee for those who entered the Ph.D. program directly.

The screening review for a student who has completed the M.A. program in linguistics at UCSB will be based on the quality of the M.A. thesis and the entire faculty's evaluation of the student's overall coursework and promise.

A student who enters the graduate program with an M.A. in linguistics from another department or institution must fulfill all the requirements expected of students completing the M.A. program at UCSB. The faculty will determine equivalence of work done elsewhere to the UCSB M.A. requirements. Students who enter with an M.A. but who did not write an M.A. thesis will be required to write one. An M.A. thesis from another university may be submitted for consideration by the UCSB faculty as a UCSB M.A. thesis equivalent. The screening review will be based on the entire faculty's evaluation of the quality of the thesis or thesis equivalent and the student's overall coursework and promise. If the submitted thesis is not acceptable as a UCSB M.A. thesis equivalent, the student will be asked to write another paper to be submitted as an M.A. thesis equivalent.

Linguistic Institute. Students are urged to consider attending the Linguistic Institute, held every other summer by the Linguistic Society of America and a cosponsoring university. The six- to eight-week summer program offers a wide range of courses, workshops, and seminars on linguistics and languages, as well as lecture series and special conferences.

Field work. Students are urged to begin thinking early in their graduate career about arrangements for pursuing linguistic field work or other research. Selection of an appropriate language or area, research topic, and sources of possible dissertation research funding should be discussed with the student's committee at an early stage.

The guidance committee. Within one quarter after passing the screening review, the student must declare an informal guidance committee composed of at least three members of the Department of Linguistics, one of whom is the committee chair; normally, these three persons will be the departmental members of the student's official doctoral committee. The guidance committee is responsible for advising and guiding the student from the time it is established until the doctoral committee is organized.

The doctoral committee. The doctoral committee must be established no later than the quarter preceding that in which the student intends to take the oral qualifying examination. The committee must consist of three Department of Linguistics faculty members and one

member from outside the department. This committee is responsible for administering the oral qualifying examination (see below).

Requirements for the Ph.D. The following are required: (a) A minimum of two years (six quarters) of academic residence, as defined and required by the university. (b) Forty-eight units of graduate coursework beyond the nine required courses for the M.A. These units must include Linguistics 221A-B-C (Field Methods); 270 (Professionalism); two seminars; plus any two of 226 (Language and Cognition), 227 (Language and Culture) *or* 228 (Discourse and Culture) — but not these two together, 229 (Formal Syntax), and 231 (History of Linguistics in the Modern Era); and 8 units of electives. (c) Two substantial research papers of publishable quality in different areas or fields of linguistics, approved by the student's guidance committee. The student may not submit the M.A. thesis or thesis equivalent for consideration as one of these papers. (d) Fulfillment of the foreign language requirement. A doctoral committee cannot be officially appointed until the foreign language requirement has been fulfilled. Details are included in the description of the foreign language requirement for the Master of Arts degree, above. (e) Passing an oral qualifying examination administered by a doctoral committee approved by the chair of the department and appointed by the dean of the Graduate Division. The oral qualifying examination will cover general linguistics. (f) Approval of a dissertation prospectus which presents the plan for the dissertation. (g) A colloquium presentation of the dissertation research. (h) An original dissertation.

The normal time for completion of the Ph.D. degree is currently seven years after completion of a B.A. in linguistics.

Optional Ph.D. Emphasis in Cognitive Science

Students pursuing a Ph.D. in this department may petition to add an emphasis in cognitive science. The interdisciplinary program in cognitive science involves faculty from the Ph.D. programs in anthropology, computer science, education, English, electrical and computer engineering, geography, linguistics, psychology, and sociology. Its goal is to give students an appreciation of the interdisciplinary study of thinking, perception, and intelligent behavior, as determined jointly by the nature of the environment and by the internal architecture of the intelligent agent, whether human, animal, or machine. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in cognitive science must fulfill the following requirements in addition to the requirements of the Ph.D. in their home department: (1) participation for at least three quarters in proseminar Interdisciplinary 200; (2) completion of at least three cognitive science elective courses with one each in three different departments; (3) completion of either (a) a research project, completed before the dissertation, resulting in a publishable paper, or (b) an extramural grant proposal for a study in cognitive science suitable for submission to an identified granting agency; (4) presentation of a research paper in a suitable academic forum, such as an emphasis or departmental colloquium, or a professional meeting; and (5) a Ph.D. dissertation centrally focused on a question emerging from cognitive science with at least two committee members representing

Optional Ph.D. Emphasis in Human Development

Students pursuing a Ph.D. in linguistics may petition to add an emphasis in human development. The interdisciplinary program in human development (IHD) involves faculty from the Ph.D. programs in communication, counseling/clinical/school psychology, education, linguistics, psychology, and sociology. The program focuses on developmental theory and research across the lifespan, and may be particularly relevant to the dissertation research of some students. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in human development must fulfill the following requirements in addition to the requirements for the Ph.D. in their home department: (1) six quarters of proseminar Interdisciplinary 592; (2) four courses in addition to the proseminar, two of which must be outside the student's home department; (3) a minimum of one member of the student's doctoral committee must be a ladder faculty member officially affiliated with the interdisciplinary program in human development. Consult the department for additional information.

Optional Ph.D. Emphasis in Language, Interaction, and Social Organization

Students pursuing a Ph.D. in the Departments of Education, Linguistics, or Sociology may petition the department to add an interdisciplinary emphasis in language, interaction, and social organization (LISO). This emphasis draws upon three approaches: interactional functional linguistics, ethnomethodology and conversational analysis, and interactional sociolinguistics.

In addition to the emphasis requirements below, students must satisfy the requirements for the Ph.D. in their home department. Work in satisfaction of departmental Ph.D. requirements may also be used to satisfy emphasis requirements. (1) The emphasis requires one quarter of Sociology 212R, Introduction to the Analysis of Recorded Interaction, and four quarters of Linguistics/Sociology/Education 274, Proseminar in Language, Interaction, and Social Organization, for credit. (2) Students must complete a minimum of three elective courses from the courses listed below. Two of the elective courses must be from the same department outside the student's home department; only one elective course may be in the student's home department: Linguistics 201, 209, 212, 214, 227, 228, 237, 260, or 266; Sociology 236, 236I, 236V, 242 (Note: Sociology 236 is prerequisite for the subsequent courses in the sociology series); Education 221B, 221C, 270G, or 270XX. (3) Students must complete a research project; the project must be supervised by at least one participating faculty member. This requirement can be satisfied in either of two ways: (a) Completion of a paper reporting a post-M.A. research project which presents an analysis of interactional data and displays command of the relevant literature. It must be written up in publishable form, though actual publication is not a requirement. (b) Successfully defend a dissertation centrally addressed to questions concerning language, interaction, and social organization; at least one member of the student's qualifying examination and dissertation committee must be a faculty member affiliated with LISO.

Questions or requests for additional information may be directed either to a participating faculty member or to LISO, c/o the Department of Sociology, UCSB, Santa Barbara, CA 93106.

Linguistics Courses

ENGLISH AS A SECOND LANGUAGE COURSES

For further information see the "English as a Second Language" entry in this catalog.

1. ESL: English Skills Review
(4) STAFF
Prerequisite: placement based on English Language Placement Examination scores, Subject A examination scores, or by consent of department.
Workload credit only. May be repeated for credit to a maximum of 12 units.
An elementary level course aimed at developing reception and production skills (listening and reading, speaking and writing). Instruction also includes an intensive review of English grammar and basic sentence construction. (F)

2. ESL: English Skills Practicum
(4) STAFF
Prerequisite: placement based on English Language Placement Examination scores, Subject A Examination scores, or by consent of department.
Workload credit only. May be repeated for credit to a maximum of 12 units.
Focus on writing skills such as paragraph development and rhetorical patterns, and oral production skills such as group discussions, individual oral presentations and seminars. Course content drawn from a variety of academic disciplines. (F,W)

3. ESL: Undergraduate Writing
(4) STAFF
Prerequisites: placement based on English Language Placement Examination scores, Subject A examination scores, or by consent of department; undergraduate standing.
Workload credit only. May be repeated for credit to a maximum of 12 units.
Focus on advanced oral and writing skills. Students work on improving fluency in written English, developing expository writing strategies, and practicing editing skills. (F,W,S)

3G. ESL: Graduate Writing
(4) STAFF
Prerequisites: placement based on English Language Placement Examination scores, or by consent of department; graduate standing.
May be repeated for credit to a maximum of 8 units. Workload credit only.
Prepares students for graduate level academic writing. Focuses on rhetorical strategies and patterns of development used in a variety of writing typically required for graduate courses. Through negotiated writing projects, students learn rhetorical conven-

tions used in their disciplines and develop prose style. (W,S)

4. ESL: Self-Paced
(1-3) STAFF

Prerequisite: consent of instructor.

Workload credit only. May be repeated for credit to a maximum of 9 units.

Designed to meet individual needs of ESL students either individually or in small groups. Open to foreign students at any level of proficiency. (W,S)

5. ESL: Intermediate Oral Practicum
(3) STAFF

Prerequisite: placement based on English Language Placement Examination scores and graduate status.

May be repeated for credit to a maximum of 6 units. Workload credit only.

Focuses on listening comprehension and oral production skills necessary for participation in an American university classroom: group discussions, conversational strategies, and individual oral presentations. (F)

6. ESL: Advanced Oral Practicum
(3) STAFF

Prerequisite: Linguistics 5 or 8.

Workload credit only. May be repeated for credit to a maximum of 6 units.

Advanced course designed to refine students' skills in classroom discussion and oral presentations. Course content will be drawn from a variety of academic disciplines. (W)

7. International TA Workshop
(3) STAFF

Prerequisite: consent of instructor.

Workload credit only. Students must have current teaching assistantship. May be repeated for a credit to a maximum of 6 units.

Intercultural teacher-training course with an emphasis on pronunciation and the oral production skills necessary for successful communication in the American university classroom. Each student is videotaped twice. (F)

9. ESL: Pronunciation
(3) STAFF

Workload credit only. May be repeated for credit to a maximum of 6 units.

Intended for students who have problems in English pronunciation or who wish to improve their pronunciation. Instruction will include a general review of vowels, consonants, stress and intonation patterns. (W,S)

11. ESL: English Structure and Vocabulary for Academic Writing
(3) STAFF

Prerequisite: placement based on English Language Placement Exam scores, Subject A Exam scores, or by consent of department.

May be repeated for credit to a maximum of 6 units. Workload credit only.

Review and practice of sentence- and discourse-level grammatical structures for non-native speakers of English. Development of academic vocabulary for writing and interpretive activities. Coursework focuses on effective expression and editing of written academic English.

LOWER DIVISION

20. Language and Linguistics
(4) STAFF

An introduction to the scientific study of language: the nature of language structure; the social and cultural function of language; the origin and the learning of language; language change and the reconstruction of languages at earlier stages.

30. The Story of English
(4) SCHWARTZ

The evolution of English from its Germanic origins to its present status as a *lingua franca* among the world's cultures. Topics include influences from other languages, English-based creoles, the major contemporary dialects, and the concept of Standard English.

40. Introduction to a Non-Indo-European Language
(4) STAFF

May be repeated for credit to a maximum of 12 units.

Introduction to a non-Indo-European language, which varies from year to year.

45. Language and Culture in the Philippines
(3) RUBINO

Introduction to the identification, structure, history, and genetic affiliations of the Philippine languages. Topics include the intricate Philippine lexicons, patterns of morphology and syntax, and the relationship between language and culture as evidenced in folklore, cuisine, art, architecture, musics, communications, and sociology.

50. Language and Power
(4) STAFF

Examination of the way social roles and relations are constructed and maintained via language, including the nature of linguistic and conceptual categories and the role of metaphor in domains ranging from everyday interaction to advertising and political discourse.

60. Word Origins
(3) STAFF

An introduction to the origin and evolution of words: language families, sound correspondences, and cognates; word-formation and loanwords; changes in meaning and form; etymology; dialectal differences in lexicon; vocabulary as historical and comparative evidence.

70. Language in Society
(4) STAFF

How does language define the relationship of the individual to society? What role does language play in constituting power, hierarchy, ethnicity, gender, ideology, and other aspects of social identity? How do speakers use language to display identity and define social context? Emphasis on sociolinguistic diversity in American society.

UPPER DIVISION

101. Basic Elements of Linguistic Analysis
(4) LI, MITHUN, THOMPSON, SCHWARTZ, GENETTI

Prerequisite: Linguistics 20.

An introduction to the analytic methodology in the study of phonology, morphology, syntax, and semantics. A typologically-oriented course designed to demonstrate how linguists analyze languages.

102. Language in the Americas: the African Experience
(4) DAVIS

Prerequisite: Linguistics 20.

An examination of the linguistic and socio-cultural consequences of language contact in African-American communities in both Latin America and the United States. Discussions include Palenquero, spoken in the northern part of Colombia, and African American Vernacular English, spoken throughout the United States.

106. Introduction to Phonetics
(4) GENETTI, GORDON

An introduction to the articulatory and acoustic properties of speech sounds. Survey of speech sounds found in the languages of the world. Emphasis on ear training and transcription using the IPA.

108. Introduction to Morphology
(4) MITHUN, GENETTI

Prerequisite: Linguistics 111.

How meaning is encoded in words in the languages of the world. Morphological and morphophonemic processes, lexical categories, derivation and inflection, productivity, tense, aspect, mode, case, concord, valence changes (passives, antipassives, benefactives, causatives), morphological typologies.

109. Introduction to Syntax
(4) LI, THOMPSON, CUMMING, GENETTI

Prerequisite: Linguistics 20.

Similarities and differences among languages in the grammatical devices they use to signal relations between nouns and verbs, negation, comparison, attribution (adjectives), and backgrounding. Data from a range of languages presented and analyzed.

111. Introduction to Phonology
(4) GENETTI, GORDON

Prerequisites: Linguistics 20 and 106.

Introduction to the description of the sound patterns of natural language.

112. Approaches to Formal Syntax
(4) SCHWARTZ

Prerequisite: Linguistics 109.

The emphasis of this course is the nature of explanation, with special reference to natural language syntax. It examines several current formal approaches for their treatment of a number of well-known empirical problems.

113. Introduction to Semantics
(4) LI, THOMPSON, DU BOIS, CUMMING

Prerequisite: Linguistics 20.

Introduction to the study of meaning in language. Consideration of semantic fields, semantic components, semantic relations, categories, prototypes, frames, metaphor, pragmatics, indexicality, and speech acts.

115. Introduction to Historical-Comparative Linguistics
(4-4) MITHUN, GENETTI, CUMMING, GORDON

Prerequisite: Linguistics 111.

An introduction to linguistic change, genetic classification of languages, and methods of reconstructing parent languages.

121A-B-C. Field Methods
(4-4-4) GENETTI, MITHUN, SCHWARTZ

Prerequisites: Linguistics 106, 108, and 111.

A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Linguistics 121C. Letter grade required for majors. Sequence may be repeated for credit to a maximum of 24 units.

Workshop format with native speaker of a non-Indo-European language as consultant. Students analyze the phonological, morphological, syntactic, and semantic structure of the language by eliciting data from the consultant and applying theoretical knowledge to the data.

124. Discourse Analysis
(4) CUMMING, DUBOIS, THOMPSON

Prerequisites: Linguistics 20.

Letter grade required for majors.

Basic concepts in the study of discourse, including differences between spoken and written language; conversational structure; structure of narrative and expository texts; information flow; and implications for the study of grammar.

130. Language and Culture
(4) DU BOIS

Prerequisite: Linguistics 20.

An introduction to the study of language in its cultural setting: the effect of culture on the linguistic system, as well as the effect of the system on the culture; language in relation to cognitive categories, both universal and culture-specific; language in relation to social roles (e.g., male, female).

132. Sex Roles and Language
(4) SCHWARTZ

Topics include the relation between cultural attitude and language, how gender socialization is reflected in the structure and use of language, and the effectiveness of political and social forces in "legislated" linguistic change. Different languages and cultures will be discussed.

133. Studies in Sexism and Language
(4) SCHWARTZ

Prerequisite: Linguistics 132.

Follow-up to Linguistics 132, this will be a workshop with outside readings—research required. Inquiry will focus on whether sexism is an inherent

consequence of sex roles. Projects investigate aspects of contemporary American culture, and other cultures, with cross-cultural implications.

134. North American Indian Languages
(4) MITHUN

Prerequisite: Linguistics 20.

Letter grade required for majors.

Survey of the several hundred native languages of North America, including the history of research on these languages, their classification, special structures, and their oral traditions.

135. California Indian Languages
(4) MITHUN

Prerequisite: Linguistics 20.

Survey of native languages for California: linguistic relationships within California and connections to non-California languages; language and culture areas; linguistic aspects of culture; grammatical characteristics of several languages.

136. Language and Culture in the African Diaspora
(4) DAVIS

Prerequisite: upper-division standing.

Same course as Black Studies 134.

Examination of the linguistic and cultural consequences of contact between blacks and other ethnic groups throughout the Americas. Topics include multilingualism, dialects, creoles, and cultural hybridization. Geographic areas surveyed include North America, Latin America, and the Caribbean.

137. Introduction to First Language Acquisition
(4) CLANCY

Prerequisite: Linguistics 20.

Introduction to current theories and methods in the study of language development. Topics include cross-linguistic developmental differences, the relationship between linguistic and socio-cognitive development, and cultural differences in language socialization.

139. Introduction to Teaching English as a Second or Foreign Language
(4) FRODESEN

Surveys theoretical and methodological issues related to teaching English as a second or foreign language. Students examine current research and pedagogy in TESFL and developments in second language acquisition theory, evaluate teaching materials, and develop classroom lessons.

160. The Structure of English
(4) SCHWARTZ

Prerequisite: Linguistics 20.

Introduction to the phonological, morphological, syntactic, and discourse features of contemporary English.

170. Language in Social Interaction
(4) DU BOIS

Prerequisite: Linguistics 20 or 70.

What role does language play in social interaction? How do individuals use language to shape relationships with others within or across social groups? How do patterns of linguistic interaction constitute patterns of social organization? Emphasis on hands-on analysis of transcriptions and recordings of face-to-face interaction.

17S. Introduction to Romance Linguistics
(4) SCHWARTZ, RAPOSO

The course aims to illustrate principles of comparative-historical linguistic analysis by examining Romance languages (French, Portuguese, etc.) for similarities and differences, and tracing their evolution from Vulgar Latin.

180. Language in American Ethnic Minority Groups
(4) CLANCY

This course will examine the language of four American ethnic minority groups—Asian-, Hispanic-, Native-, and African-American–focusing on the special linguistic features and ways of using English in each group and on issues of inter-ethnic communication.

18S. Animal Communication
(4) LI

The nature, process, mechanism, function, ontogeny and evolution of communicative behavior in the animal kingdom. The basic principles of animal communication: sensory channels, signal specificity, signal economy, graded vs. discrete signals, ritualization, human vs. animal. Description of selected animals: birds, simians and apes, cetaceans, social insects.

194. Group Studies in Linguistics
(2-4) STAFF

Prerequisite: Linguistics 20.

May be repeated for credit to a maximum of 8 units.

A course limited to small groups whose interest and needs will determine the central focus.

19SA-B-C. Honors Thesis
(2-3, 2-3, 2-3) STAFF

Prerequisites: senior standing; consent of instructor.

Students must have at least a 3.5 grade-point average for all linguisitics courses. Six credits of 195 A-B-C are required and may be taken over two or three terms. Grading is on an in-sequence basis, with a final grade submitted on completion of the paper.

Guided research and writing of an original research paper to meet the requirements of the honors program in Linguisitcs.

199. Independent Studies in Linguistics
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in linguistics; consent of instructor.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Admission by special arrangement.

Intended for the study of special areas within linguistics.

199RA. Independent Research Assistance in Linguistics
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in linguistics; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

200. Language and Linguistics for Non-linguists
(4) LI, CUMMING, MITHUN

Designed for graduate students in related disciplines with little or no previous linguistics experience. The course will cover fundamental concepts of modern linguistics, including: phonology, morphology, syntax, discourse, semantics, language change, language and cognition, and language and culture.

201. Research Methodology and Statistics in Linguistics
(4) CLANCY, GORDON

Prerequisite: post-master's degree in linguistics.

Approaches to scientific inquiry and philosophy of science; scientific methodology; enumeration and evaluation of various research designs for experimental and descriptive research; and statistical analyses relevant to discourse research in linguistics such as hypothesis testing, ANOVA, Correlation, Chi-Square, Cluster Analysis, etc.

202. Language in the Americas: The African Experience
(4) DAVIS

Prerequisite: Linguistics 20.

An examination of the linguistic and socio-cultural consequences of language contact in African-American communities in both Latin America and the United States. Discussions include Palenquero, spoken in the northern part of Colombia, and African American Vernacular English, spoken throughout the United States.

206. Introduction to Phonetics
(4) GENETTI, GORDON

Prerequisite: Linguistics 20.

An introduction to the articulatory and acoustic properties of speech sounds. Survey of speech sounds found in the languages of the world. Emphasis on ear training and transcription using the IPA.

208. Introduction to Morphology
(4) MITHUN, GENETTI

Prerequisite: Linguistics 111.

How meaning is encoded in words in languages of the world. Morphological and morphophonemic processes, lexical categories, derivation and inflection, productivity, tense, aspect, mode, case, concord, valence changes, (passives, antipassives, benefactives, causatives), morphological typologies.

209. Introduction to Syntax
(4) LI, THOMPSON, GENETTI, CUMMING

Prerequisite: Linguistics 20.

Similarities and differences among languages in the grammatical devices they use to signal relations between nouns and verbs, negation, comparison, attribution (adjectives), and backgrounding. Data from a range of languages presented and analyzed.

211. Introduction to Phonology
(4) GENETTI, GORDON

Prerequisite: Linguistics 106.

Introduction to the description of the sound patterns of natural language.

212. Transcription and Analysis of Spoken Discourse
(4) DU BOIS

Prerequisite: Linguistics 211.

How to transcribe spoken conversational discourse for purposes of linguistic research. Identification of intonation units, contours, stress, pauses, other prosody, speaker overlap. Computational tools for managing and analyzing discourse data. Emphasis on developing practical skills.

213. Experimental Phonetics
(4) STAFF, GORDON

Prerequisites: Linguistics 106 and 211.

The experimental approach to the articulation, acoustics, and perception of speech. The relation of phonetics to phonological alternations and sound change. The use of phonetic data to resolve phonological questions. Interpretation and evaluation of experiments. The acoustic theory of maximal perceptual distance.

214. Discourse
(4) CUMMING, THOMPSON, CLANCY, CHAFE, DUBOIS

Prerequisite: Linguistics 212.

Survey of approaches to discourse analysis. Discourse and grammar, information flow, narrative and rhetorical structure, the analysis of conversations, comparisons of spoken and written language.

21S. Introduction to Historical-Comparative Linguistics
(4) CUMMING, GENETTI, MITHUN

Prerequisite: Linguistics 211.

An introduction to linguistic change, genetic classification of languages, and methods of reconstructing parent languages.

216. Grammar Writing
(4) LI, MITHUN, THOMPSON, GENETTI

Prerequisite: Linguistics 208 or 234 or 235.

Training in writing a description of a language, including critical review of selected existing grammars, discussion of contents, and practice in writing.

217. Advanced Discourse
(4) DUBOIS, THOMPSON, CUMMING, CHAFE

Prerequisites: Linguistics 212 and 214.

Application of information flow and rhetorical structure theories to natural language data.

220. Prosody
(4) CHAFE, GORDON

Perceptual and acoustic aspects of pitch, amplitude, and tempo and their interaction with discourse. Comparison of prosodic theories.

221A-B-C. Field Methods
(6-6-6) MITHUN, CUMMING, GENETTI, THOMPSON, DUBOIS, GORDON

Prerequisites: Linguistics 208, 214, 234, and 235.

A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Linguistics 221C.

Techniques of eliciting and analyzing phonological, grammatical, and discourse data. Students will work with a speaker of a little known language for three consecutive quarters. A series of short papers will be required.

222. Typology and Universals
(4) MITHUN, THOMPSON, CUMMING, GENETTI, LI, GORDON

Prerequisites: Linguistics 208 and 234.

Reading and discussion of major contributions to the literature in typology and universals, focusing on such problems as lexical categories, systems of case marking, voice, reflexives, tense-aspect-mood, and relative clauses.

223. Languages in Contact
(4) LI, GENETTI

Prerequisites: Linguistics 208, 209, 211, and 215.

Types, causes, mechanisms, and consequences of contact-induced language change, including a consideration of pidgins and creoles.

224. Spoken and Written Discourse
(4) CHAFE

Prerequisites: Linguistics 212 and 214.

Comparisons of different genres and styles of writing and speaking, focusing on ways in which language use determines its form.

225. Semantics and Pragmatics
(4) CUMMING, DU BOIS, THOMPSON

Prerequisite: Linguistics 209.

Introduction to the study of meaning. How meanings are integrated into linguistic sign systems, contexts of use. Pragmatic theories of indexicality, deixis, implicature, presupposition, speech acts, discourse comprehension. Semantic differences across languages.

226. Language and Cognition
(4) CLANCY

Prerequisites: Linguistics 208, 209, and 214.

A psycholinguistic overview of the relationship between language and cognition, including cognitive constraints on the nature of lexical and grammatical categories, morphological structure, sentence-level syntax, and discourse organization.

227. Language and Culture
(4) DU BOIS

Role of language in culture: language as embodiment of culture. Linguistic classification of experience. Relation of habitual thought and behavior to language. Cross-linguistic diversity and universals. Language as instrument and object of socialization. Theories of Sapir, Whorf, Ochs, others.

228. Discourse and Culture
(4) DU BOIS

Prerequisite: Linguistics 227.

Ethnography of communication. Diverse ways of speaking across cultures and genres: ritual language, magical incantation, divination, oratory, proverbs, others. Role of form in establishing sociocultural power of discourse. Discourse as culture. Theories of prior text, Bakhtinian voice.

229. Formal Syntax
(4) CUMMING

Prerequisites: Linguistics 112 and 209.

A consideration of syntactic problems from the perspective of current formal syntactic theories, such as government and binding, relational grammar, and lexical-functional grammar.

231. History of Linguistics
(4) CHAFE, MITHUN, THOMPSON, DU BOIS, LI

Prerequisites: Linguistics 208, 209, 211, and 215.

Ways in which linguistics has been practiced over the last 2,500 years, with emphasis on developments in the nineteeth and, especially, twentieth centuries. People and ideas that have most influenced the field.

232. Foundations of Sociocultural Linguistics
(4) DU BOIS

Investigates sociocultural theories of language. Language as culture; culture as language. Social and interactional matrix of speech and language. Close reading of great books by Humboldt, Whitney, Boas, Sapir, Malinowski, Volosinov-Bakhtin, Vygotsky, and Weinreich.

233. Advanced Morphology
(4) MITHUN, GENETTI

Prerequisite: Linguistics 208.

Theoretical approaches to morphology, including discussion of inflection versus derivation, nature of the lexicon, morphological change and the relation of morphology to phonology, syntax, discourse, and semantics. Methods of morphological description and analysis. Survey of morphological structures in diverse languages.

234. Advanced Syntax
(4) GENETTI, CUMMING, THOMPSON, MITHUN

Prerequisite: Linguistics 209.

Functional approaches to syntax. Methods of syntactic description and explanation. Survey of clause level syntactic structures in diverse languages.

235. Advanced Phonology
(4) GENETTI, GORDON

Prerequisite: Linguistics 211.

Review of articulatory and acoustic phonetics and methods of phonological description and analysis. Current issues in phonological theory. Survey of phonological patterns and systems in diverse languages.

236. Advanced Language Change
(4) MITHUN, GENETTI, CUMMING

Prerequisite: Linguistics 215.

Types of theories of language change. Language families and subgroups. Internal and comparative reconstruction. The interpretation of historical records. Dialectology; sociolinguistic factors in language change and processes of grammaticization. Ramifications of observed changes for synchronic theories of language structure.

237. Introduction to First Language Acquisition
(4) CLANCY

Prerequisite: Linguistics 20..

Same course as Linguistics 137.

Introduction to current theories and methods in the study of language development. Topics include cross-linguistic developmental differences, the relationship between linguistic and socio-cognitive development, and cultural differences in language socialization.

238. Syntax Beyond the Clause
(4) THOMPSON, GENETTI, CUMMING, MITHUN

Prerequisite: Linguistics 234.

Functional approaches to the syntax of multi-clausal constructions, including relative clause structures; complements; adverbial clauses; clause chaining; and issues of co-ordination and subordination.

239. Introduction to Teaching English as a Second or Foreign Language
(4) STAFF

Surveys theoretical and methodological issues related to teaching English as a second or foreign language. Students examine current research and pedagogy in TESFL and development in second language acquisition theory and, evaluate teaching materials and develop classroom lessons.

240. Anthropological Linguistics
(4) DU BOIS

The course will (1) survey the modern history of theoretical linguistics: structuralism, generative, and postgenerative theories of language; (2) present the fundamental concepts in methodologies of synchronic and diachronic linguisitics; (3) introduce fieldwork methodologies.

241A-B-C. Language of the Year
(2-4) STAFF

Prerequisite: Linguistics 221A or field work experience.

May be repeated for credit. The 4 unit option is for students who write a paper; the 2 unit option may not be applied to the M.A. or Ph.D. requirements.

Research on a designated language, which varies from year to year.

242A-B. Topics in Linguistic Structures
(4-2) STAFF

Prerequisites: Linguistics 208, 209, 211, and 215.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 2428. May be repeated for credit.

Specialized topics in the study of a given language.

243A-B. Topics in Linguistic Families
(4-2) STAFF

Prerequisites: Linguistics 208, 209, 211, and 215.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 2438. May be repeated for credit.

Specialized topics in the study of a given language family.

244A-B. Topics in Linguistic Areas
(4-2) STAFF

Prerequisites: Linguistics 208, 209, 211, and 215.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 2448. May be repeated for credit.

Specialized topics in the study of a given linguistic area.

251A-B. Seminar in Phonetics and Phonology
(4-2) GENETTI, GORDON

Prerequisite: Linguistics 208 or 211 or 212 or 235.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 251B. May be repeated for credit.

A. Specialized topics in phonetics and phonology. Same course as Linguistics 281.

B. Paper written on topic developed out of Linguistics 251A.

252A-B. Seminar in Morphology and Syntax
(4-2) LI, MITHUN, THOMPSON, GENETTI

Prerequisite: Linguistics 208 or 234.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 252B. May be repeated for credit.

A. Specialized topics in morphology and syntax. Same course as Linguistics 282.

B. Paper written on topic developed out of Linguistics 252A.

253A-B. Seminar in Semantics and Pragmatics
(4-2) CUMMING, THOMPSON, DU BOIS

Prerequisites: Linguistics 209 and 225.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 253B. May be repeated for credit.

A. Specialized topics in semantics and pragmatics. Same course as Linguistics 283.

B. Paper written on topic developed out of Linguistics 253A.

254A-B. Seminar in Discourse
(4-2) CHAFE, MITHUN, THOMPSON, CLANCY, DU BOIS, CUMMING

Prerequisite: Linguistics 212 or 214 or 234.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 254B. May be repeated for credit.

A. Specialized topics in discourse. Same course as Linguistics 284.

B. Paper written on topic developed out of Linguistics 254A.

255A-B. Seminar in Language Change
(4-2) GENETTI, MITHUN

Prerequisites: Linguistics 208, 209, and 215.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of

Linguistics 255B. May be repeated for credit.

A. Specialized topics in language change. Same course as Linguistics 285.

B. Paper written on topic developed out of Linguistics 255A.

2S6A-B. Seminar in Typology and Universals
(4-2) MITHUN, THOMPSON, GENETTI, CUMMING

Prerequisite: Linguistics 208 or 222 or 234 or 235.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 256B. May be repeated for credit.

A. Specialized topics in typology and universals. Same course as Linguistics 286.

B. Paper written on topic developed out of Linguistics 256A.

2S7A-B. Seminar in Psycholinguistics
(4-2) CLANCY

Prerequisites: Linguistics 208, 209, and 211.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 257B. May be repeated for credit.

A. Specialized topics in psycholinguistics. Same course as Linguistics 287.

B. Paper written on topic developed out of Linguistics 257A.

2S8A-B. Seminar in Sociocultural Linguistics
(4-2) CLANCY, DU BOIS

Prerequisite: Linguistics 227.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 258B. May be repeated for credit.

A. Specialized topics in sociocultural linguistics. Same course as Linguistics 288.

B. Paper written on topic developed out of Linguistics 258A.

2S9A-B. Seminar in History of Linguistics
(4-2) CHAFE, DU BOIS

Prerequisite: Linguistics 231.

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Linguistics 259B. May be repeated for credit.

A. Specialized topics in the history of linguistics. Same course as Linguistics 289.

B. Paper written on topic developed out of Linguistics 259A.

260. Structure of English
(4) STAFF

Prerequisite: Linguistics 209.

The study of syntactic and semantic patterns in English. Analysis of such patterns will be presented in the framework of language universals.

263. Language and the Body
(4) LERNER, THOMPSON

Prerequisite: graduate standing.

Same course as Linguistics 273A and Sociology 273A. For students not planning to enroll in Linguistics or Sociology 273B.

Brings together the methods and findings of functional linguistics and those of conversation analysis in a dialogue centering on the visible behavior of the body in the organization of talk-in-interaction, especially gesture, gaze, and body movement.

26S. Acquisition of Grammar
(4) CLANCY

Prerequisite: Linguistics 237.

Theories, methods, and cross-linguistic data in language acquisition; focus on grammar. Evaluation of current theoretical controversies concerning the mechanisms and bases—biological, cognitive, and social—of language acquisition.

266. Acquisition of Discourse
(4) CLANCY

The development of discourse from preverbal "conversations" to the narratives of school children. Cognitive, social and linguistic skills underlying production and comprehension of conversational and narrative discourse.

270. Professionalism
(2) STAFF

Prerequisite: graduate standing in linguistics.

Skills important to the professional linguist: preparing abstracts for and delivering oral presentations at conferences; preparing grant proposals; publishing research.

271A-B-C. Research Orientation
(2-2-2) STAFF

May not be applied toward the M.A. or Ph.D. degree requirements.

Sequence of lectures by faculty of the Linguistics Department and closely related departments, to acquaint new graduate students with current faculty research, and with research directions and resources of the campus.

272. Linguistics Colloquium
(2-4) STAFF

May not be applied toward the M.A. or Ph.D. degree requirements. May be repeated for credit.

Presentations on current topics in linguistics by visiting scholars, faculty, and graduate students.

273A-B. Language and the Body
(4-2) LERNER, THOMPSON

Prerequisite: graduate standing.

Same course as Sociology 273A-B. A two-quarter in-progress sequence with both grades given upon completion of Sociology 273B.

Brings together the methods and findings of functional linguistics and those of conversation analysis in a dialogue centering on the visible behavior of the body in the organization of talk-in-interaction, especially gesture, gaze, and body movement.

274. Proseminar in Language, Interaction, and Social Organization
(2-4) STAFF

Prerequisite: graduate standing.

Same course as Sociology 274 and Education 274. May be repeated for credit.

Discussion of current research, literature, and theoretical and methodological issues in language and social interaction.

275. Seminar in Native American Languages
(2-4) CHAFE, MITHUN

Prerequisite: consent of instructor.

May be repeated for credit.

Topics in Native American Indian languages.

281. Seminar in Phonetics and Phonology
(4) GENETTI, GORDON

Prerequisite: Linguistics 208 or 211 or 212 or 235.

Same course as Linguistics 251A; for students not planning to take Linguistics 251B.

Specialized topics in phonetics and phonology.

282. Seminar in Morphology and Syntax
(4) LI, MITHUN, THOMPSON, AND GENETTI

Prerequisite: Linguistics 208 or 234.

Same course as Linguistics 252A; for students not planning to take Linguistics 252B.

Specialized topics in morphology and syntax.

283. Seminar in Semantics and Pragmatics
(4) THOMPSON, DU BOIS, CUMMING

Prerequisites: Linguistics 209 and 225.

Same course as Linguistics 253A; for students not planning to take Linguistics 253B.

Specialized topics in semantics and pragmatics.

284. Seminar in Discourse
(4) CHAFE, MITHUN, THOMPSON, CLANCY, DU BOIS, CUMMING

Prerequisites: Linguistics 212, 214, and 234. Same course as Linguistics 254A; for students not planning to take Linguistics 254B.

Specialized topics in discourse.

28S. Seminar in Language Change
(4) MITHUN, LI, GENETTI

Prerequisites: Linguistics 208, 209, and 215.

Same course as Linguistics 255A; for students not planning to take Linguistics 255B.

Specialized topics in language change.

286. Seminar in Typology and Universals
(4) LI, MITHUN, THOMPSON, GENETTI, CUMMING

Prerequisite: Linguistics 208 or 222 or 234 or 235.

Same course as Linguistics 256A; for students not planning to take Linguistics 256B.

Specialized topics in typology and universals.

287. Seminar in Psycholinguistics
(4) CLANCY

Prerequisites: Linguistics 208, 209, and 211.

Same course as Linguistics 257A; for students not planning to take Linguistics 257B.

Specialized topics in psycholinguistics.

288. Seminar in Sociocultural Linguistics
(4) CLANCY, DU BOIS

Prerequisite: Linguistics 227.

Same course as Linguistics 258A; for students not planning to take Linguistics 258B.

Specialized topics in sociocultural linguistics.

289. Seminar in History of Linguistics
(4) CHAFE, DU BOIS

Prerequisite: Linguistics 231.

Same course as Linguistics 259A; for students not planning to take Linguistics 259B.

Specialized topics in the history of linguistics.

297. Graduate Studies
(4) STAFF

Prerequisite: consent of instructor.

Graduate credit given for an upper-division course with additional work at the graduate level.

S00. Teaching Assistant Practicum
(1-4) STAFF

Prerequisites: appointment as teaching assistant and departmental approval.

No unit credit allowed toward advanced degree.

Supervised teaching of undergraduate linguistics courses.

S04. English as a Second Language Teaching Assistant Training
(2) STAFF

Covers ESL teaching methodology.

S04A-B. Practicum in Teaching English as a Second Language
(2-2) STAFF

Prerequisite: consent of department.

Students must submit application for ESL Program T.A. appointment.

Preparation in teaching English for academic purposes and concurrent training for prospective and newly appointed teaching assistants in the ESL Program. Topics include orientation to the ESL curriculum, reading and composition pedagogy, academic oral skills, syllabus design and classroom techniques.

S0S. Teaching Assistant Seminar
(1) STAFF

No credit allowed toward advanced degree.

Covers development of teaching techniques.

591. Research in Linguistics
(1-12) STAFF

No unit credit allowed toward advanced degree.

Research must be under the direction of a faculty member(s).

S94. Topics in Linguistics
(4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit.

Specialized studies in an area of linguistics.

596. Directed Reading and Research
(2-4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit as determined by the department chair.

Individual tutorial in any area of linguistics.

S97. Individual Study for Master's and Ph.D. Examinations
(1-12) STAFF

Prerequisites: consent of instructor and graduate advisor.

No unit credit allowed toward advanced degree.

Instructor should be student's major professor or chair of the committee.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisites: consent of instructor and graduate advisor.
No unit credit allowed toward degree.
Master's thesis research and preparation. Instructor normally should be chair of the student's thesis committee. Only for research underlying the thesis, writing the thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF
Prerequisite: instructor approval required prior to registration.

Related Courses in Other Departments

Anthropology: see 2
Chicano Studies: see 120, 131
Classics: see 202
Communications: see 107A-111, 125-127, 151, 156-158, 210, 211, 223, 225, 226, 228
Computer Science: see 136, 262
Education: see 123A-B, 202A-B, 207, 210D, 234, 270H, E391E-F-G
English: see 111, 205A-B-C, 206-208
French: see 102, 103, 105, 107AA-ZZ, 115, 203, 204A-B
German: see 103, 104, 112D, 120, 218-220, 262
Japanese 170
Philosophy: see 100C, 150C, 170, 183-186, 250C, 270G, 273G, 283G, 284G, 285G, 286G, 296C, 299A
Psychology: see 127
Religious Studies: see 14, 114C
Semitic: see 120A-B-C
Sociology: see 136, 136Q, 210, 242
Spanish: see 100, 101, 107, 109, 114A-B-C, 200, 202, 207, 209, 221A-B, 296A-B

Marine Science

Interdepartmental Graduate Program in Marine Science,
Division of Mathematical, Life, and Physical Sciences
Building 478, Room 1206;
Telephone (805) 893-8162
E-mail: marinegp-gradasst@lifesci.ucsb.edu
Web site: marinegp.ucsb.edu
Program Chair: Alice Alldredge

Faculty

Department of Anthropology

Susan C. Stonich, Ph.D., University of Kentucky, Associate Professor (human dimensions of global environmental change, coastal zone development, especially aquaculture and tourism, Latin America and Asia)

Department of Ecology, Evolution, and Marine Biology

Alice L. Alldredge, Ph.D., UC Davis, Professor (biological oceanography, zooplankton ecology, carbon cycling)

Mark A. Brzezinski, Ph.D., Oregon State University, Professor (biological oceanography, elemental cycling, phytoplankton ecology)

David J. Chapman, Ph.D., Stanford University, Professor (phycology, biochemical evolution)

James J. Childress, Ph.D., UC San Diego, Professor (ecological physiology of invertebrates and fishes, biological oceanography, physiology of deep-sea animals)

Peter M. Collins, Ph.D., University of London, Professor (endocrinology, hormonal regulation in vertebrates)

Steven D. Gaines, Ph.D., Oregon State University, Professor (marine community ecology, dispersal, biogeography, biostatistics)

Sally J. Holbrook, Ph.D., UC Berkeley, Professor (population ecology, marine vertebrate predation and competition)

Robert S. Jacobs, Ph.D., Loyola University, Professor (pharmacology, cellular and molecular mechanism of action of marine natural products and toxins)

Armand M. Kuris, Ph.D., UC Berkeley, Professor (parasitology, marine ecology, crustacean biology)

John M. Melack, Ph.D., Duke University, Professor (limnology, biogeochemistry, wetland ecology)

Roger Nisbet, Ph.D., University of St. Andrews, Scotland, Professor (theoretical population ecology, marine toxicology)

Barbara B. Prezelin, Ph.D., Scripps Institution of Oceanography, Professor (phytoplankton physiology and productivity, regulation of marine photosynthesis, bio-optical modeling)

Russell J. Schmitt, Ph.D., UC Los Angeles, Professor (marine community ecology and population biology, consumer-resource interactions; marine invertebrates and reef fishes)

Robert R. Warner, Ph.D., Scripps Institution of Oceanography, Professor (evolutionary ecology and population biology; ecology and behavior of coral reef fishes)

Department of Molecular, Cellular, and Developmental Biology

Kathleen Foltz, Ph.D., Purdue University, Associate Professor (cellular and molecular biology, marine invertebrate development)

Daniel Morse, Ph.D., Albert Einstein College of Medicine, Professor (molecular genetics, biochemistry, marine biology, developmental biology)

William C. Smith, Ph.D., UC Santa Cruz, Assistant Professor (chordate embryogenesis and morphogenesis, developmental genetics of marine urochordates)

J. Herbert Waite, Ph.D., Duke University, Professor (protein chemistry, biomolecular materials in marine invertebrates, adhesive proteins)

Department of Geography

Tommy Dickey, Ph.D., Princeton University, Professor (atmosphere-ocean interactions and upper ocean mixing; turbulence and internal waves)

Catherine Gautier, Ph.D., University of Paris, Professor (earth radiation budget and cloud processes, radiative transfer and remote sensing, global climate processes and earth system science)

Leal Mertes, Ph.D., University of Washington, Associate Professor (fluvial geomorphology, remote sensing of wetlands, Amazon River)

Joel Michaelsen, Ph.D., UC Berkeley, Professor (climatology/meteorology, climate change, marine resources, temporal and spatial statistics)

David Siegel, Ph.D., University of Southern California, Professor (physical and bio-optical oceanography, numerical modeling, turbulence, air-sea interaction and theoretical ecology)

Libe Washburn, Ph.D., UC San Diego, Professor (ocean turbulence and mixing processes, ocean bio/optics, air-sea interaction and marine pollution)

Department of Geological Sciences

Jordan F. Clark, Ph.D., Columbia University, Assistant Professor (hydrogeology)

Rachel M. Haymon, Ph.D., Scripps Institution of Oceanography, Professor (marine geology and geochemistry)

James P. Kennett, Ph.D., Victoria University of Wellington, New Zealand, Professor (paleoceanography, marine geology)

David W. Lea, Ph.D., Massachusetts Institute of Technology—Woods Hole Oceanographic Institute, Associate Professor (chemical oceanography and paleoceanography)

Bruce P. Luyendyk, Ph.D., Scripps Institution of Oceanography, Professor (tectonics, geophysics, paleomagnetism)

Ken C. Macdonald, Ph.D., Massachusetts Institute of Technology, Professor (marine tectonics and magnetism)

Department of Mechanical and Environmental Engineering

Wilbert J. Lick, Ph.D., Rensselaer Polytechnic Institute, Professor (oceanography and limnology, applied mathematics)

Stephen R. McLean, Ph.D., University of Washington, Associate Professor (fluid mechanics, physical oceanography, sediment transport)

Emeriti Faculty

James F. Case, Ph.D., Johns Hopkins University, Professor Emeritus (bioluminescence, neurobiology)

Raymond C. Smith, Ph.D., Stanford University, Professor Emeritus (biooptics, remote sensing)

Robert K. Trench, Ph.D., UC Los Angeles, Professor Emeritus (coral reef biology; biochemistry, physiology, and phylogenetics of symbiosis)

The Interdepartmental Graduate Program in Marine Science offers studies leading to the master of science and doctor of philosophy degrees in marine science. This program recognizes the intrinsic interdisciplinary nature of modern marine science and the necessity for cross-disciplinary, graduate-level training through a program which brings together 34 marine faculty located in five departments on the UCSB campus. These include the departments of Anthropology; Chemistry and Biochemistry; Ecology, Evolution, and Marine Biology; Geological Sciences; Geography; Molecular, Cellular, and Developmental Biology; and Mechanical Engineering. All participating faculty maintain strong marine-

oriented research programs which accommodate students from both the Interdepartmental Graduate Program in Marine Science and their own individual departmental graduate programs.

The program emphasizes the understanding of the ocean as an integrated system. Research areas in the program currently under active investigation include biological, chemical, and physical oceanography, marine geochemistry, marine geology and geophysics, marine biology, paleoceanography, ocean optics, and remote sensing, and ocean engineering. Some students focus on a particular disciplinary area for their research (e.g., biological oceanography, marine geology, ocean physics, etc.), but enter the program because they seek a broader training in marine science that can be provided within the framework of traditional departmental programs. Others complete interdisciplinary dissertations involving expertise in two or more subdisciplines within marine science

The program accommodates students with a bachelor's degree or its equivalent in a biological or physical science, engineering, or mathematics. In addition to program requirements, candidates must meet university degree requirements found in the chapter "Graduate Education at UCSB." Master's and doctoral candidates in the program must be registered as full-time students in classes in the participating departments or in Interdepartmental Program classes. Highly individualized programs of instruction can be undertaken by students enrolled in the program and interdisciplinary research is greatly facilitated by the breadth of faculty available as advisors and thesis committee members.

Admission

Applicants may apply for either the M.S. or Ph.D. degree program. The M.S. program is small and oriented toward research. An M.S. degree is not required to enter the Ph.D. program. In addition to fulfilling all university requirements for admission to graduate status, described in the chapter "Graduate Education at UCSB" the applicant will normally hold a bachelor's degree in a biological or physical science, engineering, or mathematics. Applicants are required to submit the UCSB application for graduate admission, official undergraduate transcripts, three letters of recommendation from individuals who can best assess the applicant's academic and research potential, and the General Test (verbal, quantitative and analytical) of the Graduate Record Examination (GRE). The GRE scores should not be more than five years old. Students should take the GRE as early as possible in the fall prior to applying to insure that scores arrive by the December 15 application deadline. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper-based test or 213 when taking the computer-based test, taken within two years of their application to UCSB. Applicants should specify their general areas of interests within marine science on their application and provide a clear and focused statement of purpose. Applications will be reviewed and directed to appropriate faculty within the program for consideration. Applicants to the program must be accepted by a major professor with whom they wish to work and who has agreed to supervise the student's graduate training and thesis research. No student will be admitted without a faculty sponsor. Therefore, applicants are encouraged to contact individual faculty in the program directly. For more information on how to choose a faculty sponsor applicants may visit the web site at marinegp.ucsb.edu or inquire to the Marine Sciences Program for assistance. Applications are considered for fall admission only and should be received with all supporting materials by December 15.

Graduate Program

Master of Science—Marine Science

The master of science (M.S.) degree is by thesis only and is viewed as a goal in its own right, rather than as a stepping stone to a Ph.D. The M.S. requirements are designed to provide maximum flexibility to accommodate individual student interests while also assuring a basic level of competence in marine science. M.S. candidates follow an integrated course of study recommended by their thesis advisor and thesis committee. The thesis committee is nominated by the end of the first year and consists of three faculty from the Interdepartmental Program, with the major professor serving as committee chair.

Degree Requirements

Requirements include the following:

A. Completion of the Marine Science core curriculum:
EEMB 243 (Biological Oceanography)
Geology 266 (Chemical Oceanography)
Geology 276 (Geological Oceanography)
Geography 263 (Introduction to Physical Oceanography).
B. Twenty-four additional units of graduate and upper-division coursework in the student's area of interest, of which no more than 8 may be courses numbered 596-599.
C. Presentation of one seminar per year at the Marine Science Graduate Seminar (MARSC 595).
D. Submission of a satisfactory thesis.
E. Presentation of a research seminar in open forum at the completion of the thesis.

There is no foreign language requirement.

Doctor of Philosophy—Marine Science

Candidates for the doctor of philosophy in marine science must demonstrate by coursework and written and oral examinations superior competence in the field of specialization, broad knowledge of the field of marine science, and satisfactory knowledge of sciences other than marine science that are relevant to the dissertation topic. Ph.D. candidates will follow an integrated course of study recommended by their dissertation advisor and dissertation committee. The dissertation committee will be nominated by the end of the second year and will consist of at least three faculty from the Interdepartmental Program, with the major professor serving as committee chair.

Degree Requirements

Requirements include the following:

A. Completion of the graduate-level core course series which includes:
EEMB 243 (Biological Oceanography)
Geology 266 (Chemical Oceanography)
Geology 276 (Geological Oceanography)
Geography 263 (Introduction to Physical Oceanography).
B. Completion of 16 additional units of graduate-level courses in marine sciences and the related area of specialty, exclusive of courses numbered 596 and 599.
C. Presentation of one seminar per year in the Marine Science Graduate Seminar (MARSC 595).
D. Satisfactory performance on a written qualifying exam covering a broad synthesis of marine science taken at the end of the first year. All students will take the same exam.
E. Satisfactory performance on an oral qualifying exam administered by the student's dissertation committee. The exam will include the student's area of specialty and the dissertation prospectus. It should be taken by the end of the third year of study at the latest. Students petition to be advanced to candidacy after passing this exam.
F. Submission of a satisfactory dissertation.
G. Presentation of a research seminar in open forum at the completion of the dissertation.

There is no foreign language requirement.

Marine Science Courses

GRADUATE COURSES

595. Seminar in Marine Science
(2) STAFF
A series of lectures and seminars on diverse research topics in marine science.

596. Directed Reading and Research
(2-12) STAFF
Prerequisite: consent of instructor.
Individual tutorial. Hours and credit by arrangement with faculty.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisites: MS candidate and consent of committee chair.
For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Preparation
(1-12) STAFF
Prerequisites: Ph.D. candidate and consent of instructor.
For writing of the dissertation.

Mathematics

**Department of Mathematics,
Division of Mathematical, Life, and Physical Sciences,
South Hall 6607;
Telephone (805) 893-2171**

Undergraduate e-mail: ugrad@math.ucsb.edu
Graduate e-mail: gradinfo@math.ucsb.edu
Web site: www.math.ucsb.edu

Department Chair: John Douglas Moore

Faculty

Adebisi Agboola, Ph.D., Columbia University, Associate Professor (number theory)

Charles A. Akemann, Ph.D., UC Berkeley, Professor (functional analysis)

Bjorn Birnir, Ph.D., The Courant Institute, Professor (nonlinear partial differential equations)

Dietmar Bisch, Ph.D., UC Los Angeles, Associate Professor (operator algebras)

Hector Ceniceros, Ph.D., Courant Institute, Assistant Professor (numerical analysis)

Daryl Cooper, Ph.D., University of Warwick, Professor (topology, group theory)

Michael G. Crandall, Ph.D., UC Berkeley, Professor (nonlinear differential equations)

Xianzhe Dai, Ph.D., State University of New York, Stony Brook, Professor (Geometric Analysis)

John E. Doner, Ph.D., UC Berkeley, Associate Professor (logic, computer science)

Larry J. Gerstein, Ph.D., University of Notre Dame, Professor (quadratic forms, number theory)

Kenneth R. Goodearl, Ph.D., University of Washington, Professor (algebra, functional analysis)

Birge Huisgen-Zimmermann, Ph.D., University of Munich, Professor (algebra, representation theory)

Ozlem Imamoglu, Ph.D., UC Santa Cruz, Assistant Professor (number theory, automorphic forms)

William Jacob, Ph.D., Princeton University, Professor (quadratic forms, division algebras)

Roy Leipnik, Ph.D., UC Berkeley, Professor (environmental mathematics, nonlinear equations)

Xu-Dong Liu, Ph.D., UC Los Angeles, Assistant Professor (numerical analysis, computational fluid dynamics)

Darren Long, Ph.D., Cambridge University, Professor (low-dimensional topology)

James McKernan, Ph.D., Harvard University, Associate Professor (algebraic geometry)

Kenneth C. Millett, Ph.D., University of Wisconsin, Professor (algebraic and geometric topology)

John Douglas Moore, Ph.D., UC Berkeley, Professor (differential geometry)

Felix Otto, Ph.D., University of Bonn, Professor (applied mathematics, partial differential equations)

Gustavo Ponce, Ph.D., Courant Institute, Professor (nonlinear partial differential equations)

Mihai Putinar, Ph.D., University of Bucharest, Professor (operator theory, complex analysis)

Martin Scharlemann, Ph.D., UC Berkeley, Professor (topology)

Thomas Sideris, Ph.D., Indiana University, Professor (partial differential equations, nonlinear wave equations)

Stephen Simons, Ph.D., Cambridge University, Professor (functional analysis)

Jeffrey Stopple, Ph.D., UC San Diego, Professor (number theory)

Guofang Wei, Ph.D., State University of New York, Stony Brook, Associate Professor (differential geometry)

Julian Weissglass, Ph.D., University of Wisconsin, Professor (mathematics education)

Raymond Y. Wong, Ph.D., Louisiana State University, Professor (topology)

Adil Yaqub, Ph.D., UC Berkeley, Professor (ring theory, universal algebras)

Rugang Ye, Ph.D., Bonn University, Professor (differential geometry)

Julius Zelmanowitz, Ph.D., University of Wisconsin, Professor (rings, modules)

Emeriti Faculty

Seymour Bachmuth, Ph.D., New York University, Professor Emeritus (group theory)

Thomas K. Boehme, Ph.D., California Institute of Technology, Professor Emeritus (function analysis)

Andrew M. Bruckner, Ph.D., UC Los Angeles, Professor Emeritus (real analysis)

Michael J. Cambern, Ph.D., UC Berkeley, Professor Emeritus (functional analysis)

Jack G. Ceder, Ph.D., University of Washington, Professor Emeritus (real analysis)

John A. Ernest, Ph.D., University of Illinois, Professor Emeritus (functional analysis)

Ky Fan, D.Sc., University of Paris, Professor Emeritus (topology, functional analysis)

Eugene C. Johnsen, Ph.D., Ohio State University, Professor Emeritus (combinatorial analysis)

Henryk Minc, Ph.D., University of Edinburgh, Professor Emeritus (linear analysis)

Morris Newman, Ph.D., University of Pennsylvania, Professor Emeritus (linear analysis)

James B. Robertson, Ph.D., Indiana University, Professor Emeritus (probability, ergodic theory)

Alex Rosenberg, Ph.D., University of Chicago, Professor Emeritus (quatratic form, Witt rings)

Melvin Rosenfeld, Ph.D., UC Los Angeles, Associate Professor Emeritus (functional analysis)

James M. Sloss, Ph.D., UC Berkeley, Professor Emeritus (partial differential equations)

David A. Sprecher, Ph.D., University of Maryland, Professor Emeritus (real analysis)

Max L. Weiss, Ph.D., University of Washington, Professor Emeritus (complex analysis)

Dietmar Bisch

ASSOCIATE PROFESSOR, MATH

Associate professor Dietmar Bisch developed a passion for his discipline as an undergraduate when he took a university mathematics class. It was love at first sight, he claims. He fell head over heels for its beauty and the rigorous analytical skills it requires. Bisch teaches upper- and lower- division courses, from basic calculus to advanced research-oriented graduate seminars.

"Lower division courses are important not just because of the actual math, but because of the analytical skills the student acquires."

"Lower-division courses are important not just because of the actual math," he said, "but because of the analytical skills the student acquires. They are indispensable nowadays. Each profession uses sophisticated technology, and a thorough math class is a must."

Bisch is doing research in operator algebras, a relatively young area of pure mathematics, which is closely related to quantum physics. "The richness of the mathematical structures and the connections to theoretical physics have always been the guiding principles in my work."

Affiliated Faculty

John C. Bruch, Jr., Ph.D., (Mechanical and Environmental Engineering)

Igor Mezic, Ph.D., (Mechanical and Environmental Engineering)

Mathematics has been called the queen and the servant of the sciences. As an independent discipline, it was first developed by the ancient Greeks, to whom we owe the notion of "mathematical proof." In the late seventeenth century, Newton developed calculus to serve as a tool in his treatment of mechanics, and was able to correctly predict the motion of the planets. This astonishing success definitively demonstrated that mathematics is the ideal language for constructing exact quantitative theories. Today mathematics plays an absolutely fundamental role in physics, economics, and engineering, and plays an ever greater role in fields such as astronomy, chemistry, geology, finance, meteorology, cryptology, ecology, computer science, the social sciences, and a host of other areas. Yet mathematics is also vibrant as a study in its own right, alive with beautiful problems and ongoing developments. These may not be initially motivated by applications, but history indicates that many of the purely mathematical developments of today will become essential to the sciences of the future.

The Department of Mathematics offers four undergraduate programs; B.S. and B.A. degrees in mathematics, a B.S. degree in mathematical sciences, and, in conjunction with the Department of Economics, a B.A. in economics/mathematics.

The Department of Mathematics offers three distinct minor programs. These programs allow non-majors to supplement their majors with cohesive course of study that reflects their interests. To ensure appropriate advising and planning, students who are considering a minor in mathematics should consult the department as soon as possible.

The department offers graduate programs leading to the M.A. and Ph.D. degrees. In addition, it offers a wide variety of service courses needed as a foundation for study in the sciences, in engineering, and in other fields.

Undergraduate advisors are available in the department office to answer questions about the department and other academic matters. Detailed information about the majors and about career options in mathematics is available in several publications, including *Professional Opportunities in the Mathematical Sciences*. The daily calendar is designed to keep students and faculty informed about current seminars, colloquia, and special events.

Various prizes and awards are offered each year to outstanding majors in mathematics. These include the Raymond L. Wilder award and student memberships in the Mathematical Association of America. Each award is given on the basis of academic excellence in the mathematics program.

Students with a bachelor's degree in mathematics who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Diagnostic and placement examination. In order to enroll in a precalculus or first-quarter calculus course at UCSB, students must take the Algebra Diagnostic Test (ADT) which is offered during pre-instructional week each quarter. Minimum scores on the ADT are required for enrollment in Mathematics 3A and 15. Time and place for this examination are announced each quarter in the *Schedule of Classes*.

Results on the Algebra Diagnostic Test are substantially improved by reviewing algebra and trigonometry prior to taking the exam. A copy of *Precalculus Review Topics* may be obtained from the UCSB Bookstore, University of California, Santa Barbara, CA 93106 for $8.50.

The department strictly enforces the requirement of a C grade or better in any course prerequisite to Mathematics 3B-C, 5A-B-C, and 34B.

Mathematics Achievement Program. The Mathematics Achievement Program (MAP) is open to all undergraduate students considering careers in the mathematical sciences or mathematics-based fields, with priority given to EOP students. Students within the program have the opportunity to study in small groups, where they can discuss and explore course concepts in greater depth than is possible within the traditional class setting. Attention is given to the individual needs of the students. Workshops provide an in-depth problem-solving experience through worksheets, discussion of homework assignments, review sessions, and practice examinations. Students interested in applying to MAP should contact the UCSB Achievement Programs, South Hall 4631; Telephone (805) 893-7125; or visit the web site: www.math.ucsb.edu/~map/.

Honors Program in Mathematics

To enter the honors program in mathematics, a student must have completed 120 units of coursework with an overall grade-point average of at least 3.5 and at least 24 upper-division mathematics and statistics units with a grade-point average of at least 3.5 (excluding Mathematics 100A-B, 193, 195A-B, and PSTAT 133A-B-C and 193). To complete the honors program, the student must maintain a grade-point average of at least 3.5 in all upper-division and graduate mathematics and statistics courses (excluding Mathematics 100A-B, 193, 195A-B, and PSTAT 133A-B-C and 193) and complete one of the following: (a) Mathematics 111A-B-C and 118A-B-C; (b) a three-quarter graduate sequence; or (c) together with an advisor, submit a Distinction in the Major proposal to the undergraduate committee for its approval. This proposal may consist of a program of mathematics and statistics courses to be completed, a project to be completed or a combination of a project and courses to be completed. Students who complete the honors program are awarded Distinction in the Major at the time of graduation.

Undergraduate Program

As preparation for entering any of the undergraduate mathematics programs, students should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Students lacking this background should take Mathematics 15. In the first two years at UCSB, all students who major in mathematics must complete the appropriate pre-major requirements. All prospective majors and pre-majors must meet with a faculty advisor, prior to admission to full major status, to discuss career opportunities and degree options and to design an upper-division course program. Admission to full major status will be granted only after this meeting has been documented. Samples of recommended programs for each degree option are available in the department office.

Bachelor of Science—Mathematics

This degree is especially suitable for students who want a rigorous program with an emphasis on theory or who plan to go on to graduate work in mathematics.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Physics 1 or 6A and Computer Science 10 or 5 (any section) are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of the following pre-major requirements, students may petition to be accepted into full major status: Mathematics 3A-B-C, 5A-B, 8; Physics 1 or 6A; Computer Science 10 or one course from 5AA-ZZ.

Upper-division major. Fifty-two upper-division units in mathematics are required, excluding Mathematics 100A-B, 193, and 195A-B. Up to 12 units of probability and statistics may be applied, excluding PSTAT 133A-B-C and 193. These 52 units must include Mathematics 108A, 122A, 111A-B, 118A-B, 111C or 118C, and one course chosen from Mathematics 145 or 147A. With an advisor's approval, 4 of the 52 units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Science—Mathematical Sciences

This is an applied mathematics degree intended for students interested in computational aspects of mathematics, systems analysis, decision sciences, physical sciences, and operations research. It is suitable as preparation for advanced training in applied mathematics, management science, business administration, or operations research.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 or 5 (any section) and Physics 1 or 6A are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of the following pre-major requirements, students may petition to be accepted into full major status: Mathematics 3A-B-C, 5A-B-C, 8; Physics 1 or 6A; Computer Science 10 or one course from 5AA-ZZ.

Upper-division major. Fifty-two upper-division units in mathematics are required, excluding Mathematics 100A-B, 193, and 195A-B. Up to 12 units of probability and statistics may be

applied, excluding PSTAT 133A-B-C and 193. The 52 units must include: Mathematics 104A-B, 108A, and two two-quarter sequences chosen from Mathematics 119A-B, 122A-B, 124A-B, 132A-B, and 137A-B. With an advisor's approval, up to 4 of the 52 required units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Arts—Mathematics

This degree provides the student with a broad, liberal education in pure mathematics and is flexible enough to allow a wide variety of upper-division programs that may be created by the student in consultation with a faculty advisor. The B.A. in mathematics contains a special concentration designed specifically as preparation for high-school teaching. However, completion of a concentration will not be formally acknowledged on the student's official transcripts or diploma.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 or 5 (any section) and Physics 1 or 6A are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of the following pre-major requirements, students may petition to be accepted into full major status: Mathematics 3A-B-C, 5A, 8; Physics 1 or 6A; Computer Science 10 or one course from 5AA-ZZ.

Upper-division major. Forty upper-division units in mathematics are required, excluding Mathematics 100A-B, 193, and 195A-B. Up to 12 units of probability and statistics may be applied, excluding PSTAT 133A-B-C and 193. The 40 units must include the specific requirements for one of the following concentrations, which will not be formally acknowledged on the student's official transcript or diploma:

A. Liberal arts concentration requirements: Mathematics 108A and three two-quarter sequences, chosen from Mathematics 108B-C, 109A-B, 111A-B, 115A-B, 118A-B, 119A-B, 122A-B, 124A-B, 132A-B, 137A-B, 145-147A, or 147A-B. With an advisor's approval, 4 units of the 40 units may be non-mathematics courses taken as part of a coherent mathematics program.
B. High-school teaching concentration requirements: Mathematics 101A-B; 102A-B; 103 and 108A. With an advisor's approval, 4 units of the 40 units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Arts—Economics/Mathematics

This program is offered jointly with the Department of Economics. It provides a theoretical foundation for advanced study in economics, business administration, law, or management science.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of the following pre-major requirements, students may petition to be accepted into full major status: Economics 1 and 2 (or 109); PSTAT 5E; Mathematics 3A-B-C, 5A-B-C, and 8. Upper-division students transferring from another major or institution may substitute Economics 109 for Economics 1 and 2.

Upper-division major. Forty-four upper-division units in economics and mathematics are required, excluding Economics 109. The 44 units must include Economics 104A-B, 105, and 140A-B; Mathematics 108A-B and 117; and 12 units of upper-division economics electives. For breadth, further elective courses concerning optimization and modeling, such as Mathematics 132A-B-C, are recommended. Students should consult closely with their advisors in the Departments of Economics and Mathematics regarding their upper-division programs, particularly if they intend to pursue graduate study in a closely related area such as mathematical economics, applied mathematics, statistics, or operations research.

Minor—Mathematics

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in mathematics and those offered by other departments and applied to the minor.

Preparation for the minor. Mathematics 3A-B-C, 5A-B, and 8.

Upper-division minor. Twenty-four upper-division units in mathematics are required, chosen from the following courses: Mathematics 104A-B-C, 108A-B-C, 109A-B-C, 111A-B-C, 113, 115A-B, 116, 117, 118A-B-C, 122A-B, 130, 145, and 147A-B.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Mathematics for High School Teaching

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in mathematics and those offered by other departments and applied to the minor.

Preparation for the minor. Mathematics 3A-B-C, 5A, and 8.

Upper-division minor. Twenty-four upper-division units in mathematics and PSTAT are required. The required courses are: Mathematics 101A-B, 102A-B, 103, and 4 upper-division units of mathematics or PSTAT elective. The following courses will *not* apply to the minor: Mathematics 100A-B, 193, 195A-B; PSTAT 133A-B-C and 193.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Mathematical Sciences

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in mathematics and those offered by other departments and applied to the minor.

Preparation for the minor. Mathematics 3A-B-C, 5A-B-C, and 8.

Upper-division minor. Twenty-four upper-division units in mathematics are required. The required courses must be chosen from: Mathematics 104A-B-C, 108A-B, 109A-B-C, 116, 117, 119A-B, 122A-B, 124A-B, 130, 132A-B-C, and 137A-B-C.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Candidates for admission to graduate programs offered by the Department of Mathematics are required to submit Graduate Record Examination (GRE) general and mathematics subject test scores. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 550 when taking the paper-based test or 213 when taking the computer-based test, taken within two years of their application to UCSB. Foreign students must have a score of 575 (or 231 on the computer-based test) for teaching assistantship consideration. Applicants for teaching assistant positions are encouraged to submit scores for the Test of Spoken English (TSE) at the time of application.

In addition to departmental requirements, candidates for graduate degrees must fulfill the university degree requirements found in the chapter "Graduate Education at UCSB."

In the following description of the M.A. and Ph.D. programs in mathematics, frequent mention will be made of "area requirements." Area requirements exist in the disciplines of algebra, analysis, applied mathematics, geometry/topology, and other areas in probability and statistics. Students whose primary interest is in the areas of statistics or probability should apply for admission to the Department of Statistics and Applied Probability, not to the Department of Mathematics. The area requirements are fulfilled by satisfactorily completing an examination and a one-year graduate course within the discipline. Complete descriptions of various area requirements and how they may be satisfied can be found in the publication *Graduate Study in Mathematics*, which is available from the department office. Contact the staff graduate advisor at gradinfo@math.ucsb.edu, or at the following address: Department of Mathematics, University of California, Santa Barbara, CA 93106. This information can also be obtained via our web site at www.math.ucsb.edu/gradinfo/grad.html.

Master of Arts—Mathematics

Admission

The applicant must (1) fulfill the scholarship requirements for graduate study, and (2) hold a

bachelor's degree in mathematics or a closely related field. Evaluation of the candidate's past work will be made by the admissions committee, and supplemental undergraduate courses will be required when necessary.

Degree Requirements

The department offers two plans for completing the degree: Plan 1 (thesis) and Plan 2 (examination option).

Both plans require completion of 42 units with the grade of at least B in each course, 24 of which must be in selected graduate courses offered by the Department of Mathematics. The remaining 18 units may be chosen from upper-division or graduate courses in mathematics, or in appropriate related fields with the approval of the Mathematics Graduate Committee. No more than 8 of the 24 graduate units may be in Mathematics 596/598 combined.

Plan 1, Thesis: In addition to the above, Plan 1 requires demonstration of adequate knowledge in linear algebra, modern algebra, real analysis, and complex analysis, and preparation of an acceptable thesis and oral defense of the thesis before a faculty committee. The 24 graduate units in mathematics must include at least one full-year course sequence that satisfies one of the area requirements.

Plan 2, Examination Option: Students must satisfy the area requirements in algebra and analysis. A student who wishes to substitute a different area requirement for one of the above areas must petition the departmental graduate committee; such petitions will normally be approved if the student has had sufficient undergraduate coursework, with good grades in the exempted area.

Master of Arts—Applied Mathematics

Admission

The candidate must (1) fulfill the scholarship requirements for graduate study; (2) hold a bachelor's degree in mathematics or a closely related field; and (3) have had undergraduate coursework in linear algebra, differential equations, advanced calculus, and in some area in which mathematics is applied. Evaluation of the candidate's past work will be made by the admissions committee, and supplemental undergraduate courses will be required when necessary.

Degree Requirements

The department offers two plans for completing the degree: Plan 1 (thesis), and Plan 2 (examination option). All candidates must complete 42 units with the grade of B or better in each course, 24 units of which must be in graduate course sequences approved and offered by the Department of Mathematics. No more than 8 of the 24 graduate units may be in Mathematics 596/598 combined.

The remaining 18 units may be in upper-division or graduate-level courses in mathematics or, with the approval of the graduate committee, outside of mathematics, with a limit of 9 units outside the department.

Plan 1, Thesis: Students must demonstrate mastery of applied algebra and applied analysis. This requirement may be fulfilled by passing each of the four sequences, Mathematics 108A-B, 104A-B-C, 124A-B, and 122A-B with average grades of at least B in each sequence. (Some of this work may have been taken in the student's undergraduate program.) Equivalent coursework taken outside UCSB will be evaluated by the graduate committee. Plan 1 students must prepare an acceptable thesis under the supervision of a faculty member and defend it before a faculty committee. The 24 graduate units in mathematics must include at least one full-year course sequence that satisfies one of the area requirements.

Plan 2, Examination Option: Students must satisfy the area requirements in applied mathematics and a second area requirement shall be chosen by the student with the approval of his or her advisor.

Students interested in continuing to the Ph.D. normally follow Plan 2 for the master's degree. To be invited to continue to the Ph.D. level, students are expected to complete their coursework and comprehensive examinations at a higher level than is expected of terminal master's degree candidates.

Doctor of Philosophy—Mathematics

Admission

A candidate for admission to the Ph.D. program in mathematics must fulfill the scholarship requirements for graduate study presented in the section of this catalog on graduate education and should have a strong undergraduate background in the mathematical sciences.

Degree Requirements

A student advances to candidacy for the degree by doing the following:

(a) Passing 72 units of 200-level graduate mathematics courses with a grade of at least B or S in each course (required grades for coursework satisfying area requirements are higher). These 72 units must include at least one further full-year graduate sequence not being used to satisfy requirement (b).

(b) Satisfying three area requirements, normally algebra and analysis, plus a third area to be determined in consultation with the graduate advisor. S/U grading is not allowed in coursework used to satisfy area requirements.

(c) Passing an oral qualifying examination on the proposed plan and subject matter for the doctoral dissertation and on mathematical topics related to the student's research.

After advancing to candidacy, the student completes the requirements for the degree by submitting an acceptable dissertation representing an original mathematical contribution, and defending this dissertation before a faculty committee.

Doctor of Philosophy—Mathematics—Science Applications Specialization

This track is intended for Ph.D. students who wish to combine mathematics with a scientific field where mathematics is applied. Typical (but not exclusive) examples of such fields include chemistry, computer science, economics, physics, and various engineering disciplines. Refer to *Graduate Study in Mathematics* for more information.

Admission

A candidate for admission to this program must fulfill the scholarship requirements for graduate study presented in the section of this catalog on graduate education and should have a strong undergraduate background in the mathematical sciences. In addition, the candidate should have completed sufficient coursework in a scientific field outside mathematics to permit graduate study in that field.

Degree Requirements

Requirements (b), (c), and (d) described above under the heading "Degree Requirements, Doctor of Philosophy—Mathematics" remain in force, as does the requirement concerning the dissertation. Requirement (a) is changed as follows:

(a) Passing 48 units of graduate courses offered by the Department of Mathematics with a grade of at least B or S in each course. In addition, passing with the grade of B or better the equivalent of two one-year sequences (six quarters of graduate-level courses, 24 units) chosen to form a coherent program of study in one or more fields outside of mathematics, as approved by the graduate committee.

Mathematics Courses

LOWER DIVISION

3A. Calculus with Applications, First Course

(4) STAFF

Prerequisite: a score at the required level on the Algebra Diagnostic Test.

Reduced credit of two units will be given to students who have received credit for Mathematics 34A. Not open for credit to students who have completed Mathematics 3AS. Students with Advanced Placement credit should contact the department. Some instructors may require graphing calculators. Consult the department regarding specific model.

Differential calculus including analytic geometry, functions and limits, derivatives, techniques and applications of differentiation, logarithmic and trigonometric functions.

3AS. Calculus with Applications

(4) STAFF

Prerequisite: a score at the required level on the Algebra Diagnostic Test.

Students with Advanced Placement credit should contact the department. Not open for credit to students who have completed Mathematics 3A. Reduced credit of two units will be given to students who have received credit for Mathematics 34A.

Differential calculus, derivatives, techniques and applications of differentiation. Equivalent course to Mathematics 3A but may involve different textbook and teaching methods.

3B. Calculus with Applications, Second Course

(4) STAFF

Prerequisite: Mathematics 3A with a grade of C or better.

Reduced credit of two units will be given to students who have received credit for Mathematics 34B. Not open for credit to students who have completed Mathematics 3BS. Students with Advanced Placement credit should contact the department. Some instructors may require graphing calculators. Consult the department regarding specific model.

Integral calculus including definite and indefinite integrals, techniques of integration, with applications in mathematics and physics.

3BS. Calculus with Applications
(4) STAFF
Prerequisite: Mathematics 3AS with a grade of C or better.

Students with Advanced Placement credit should contact the department. Not open for credit to students who have completed Mathematics 3B. Reduced credit of two units will be given to students who have received credit for Mathematics 34B.

Integral calculus, with applications to mathematics and physics. Equivalent course to Mathematics 3B but may involve different textbook and teaching methods.

3C. Calculus with Applications, Third Course
(4) STAFF
Prerequisite: Mathematics 3B with a grade of C or better.

Not open for credit to students who have completed Mathematics 3CS. Some instructors may require graphing calculators. Consult the department regarding specific model.

Calculus of functions of several variables, vectors in two- and three-space, partial derivatives, and gradients. Introduction to differential equations including modeling, first-order systems of equations, and qualitative theory. Taylor approximations.

3CS. Calculus with Applications
(4) STAFF
Prerequisite: Mathematics 3BS with a grade of C or better.

Not open for credit to students who have completed Mathematics 3C.

Continuation of Mathematics 3AS-BS, including differential equations, multivariable calculus, and Taylor approximations. Equivalent course to Mathematics 3C but may involve different textbook and teaching methods.

3H. Honors Seminar, Calculus
(1) STAFF
Prerequisites: concurrent enrollment in Mathematics 3A or 3B or 3C.

May be repeated for credit to a maximum of 3 units.

A supplement to the Mathematics 3 sequence emphasizing fundamental concepts and applications. Intended for highly motivated and well prepared students.

5A. Introduction to Linear Algebra and Differential Equations
(4) STAFF
Prerequisite: Mathematics 3C with a grade of C or better.

Systems of linear equations, vectors in n-dimensional Euclidean space, linear independence, eigenvalues and eigenvectors, and their applications to differential equations, including stability.

5B. Vector Calculus
(4) STAFF
Prerequisites: Mathematics 5A with a grade of C or better.

Differential vector calculus, including gradient and Lagrange multipliers. Integral vector calculus including line integrals, surface integrals, Green's theorem, and related topics.

5C. Differential Equations and Fourier Series
(4) STAFF
Prerequisites: Mathematics 5B with a grade of C or better..

Further study of linear systems of differential equations, numerical solutions of differential equations, Fourier series, with applications. Introduction to partial differential equations.

5H. Honors Seminar, Advanced Calculus and Linear Algebra
(1) STAFF
Prerequisites: Mathematics 3C or 5A or 5B with a grade of A- or better; concurrent enrollment in Mathematics 5A or 5B or 5C.

May be repeated for credit to a maximum of 3 units.

A supplement to the Mathematics 5 sequence emphasizing fundamental concepts and applications. Intended for highly motivated and well prepared students.

6. Computing in Mathematics
(4) STAFF
Prerequisite: Mathematics 3B.

Computer software useful in mathematics: symbolic algebra, numerical methods, and simulation.

8. A Transition to Higher Mathematics
(S) STAFF
Prerequisite: Mathematics 3A.

Introduction to the elements of propositional logic, techniques of mathematical proof, and fundamental mathematical structures including sets, functions, relations, and other topics as time permits. Mastery of this material is essential for students planning to major in mathematics.

9. Sophomore Seminar in Mathematics
(3) STAFF
Prerequisite: Mathematics 3B.

May be repeated for credit to a maximum of 9 units.

Team-taught seminar which aims to give students exposure to a wide range of interesting topics outside the traditional calculus sequence.

12A. Modern Introductory Mathematics of Finance
(4) STAFF

Intended for students seeking a general background in mathematics of finance. A calculator with exponential and logarithm function is needed. Topics include: simple and compound interest, simple and general annuities, loans with two interest notes, retirement plans, and life insurance.

13. Mathematics Appreciation
(3) STAFF

No unit credit allowed toward the major or minor.

A course for the non-major intended to promote a better understanding of the nature of mathematics, the character and origin of different subject fields in mathematics, and the sources of mathematical research.

15. Precalculus
(4) STAFF
Prerequisite: a score at the required level on the Algebra Diagnostic Test.

Students who have earned a grade of C or better in a course with a prerequisite including algebra or trigonometry may not receive credit for this course. Some instructors may require graphing calculators. Consult the department regarding specific model.

A functional approach integrating algebra and trigonometry. Topics include: one-to-one and onto functions; inverse functions; properties and graphs of polynomial, rational, exponential, and logarithmic functions; properties and graphs of inverse trigonometric identities; and trigonometric equations.

20. Problem Solving and Mathematics Teaching
(4) STAFF
Prerequisite: Writing 2.

Primarily for students interested in becoming elementary or secondary teachers.

Open ended, hands-on mathematical investigations involving geometry, number theory, algebra, probability; topics in mathematics pedagogy including problem solving, language skills, collaborative learning, math anxiety, assessment and equity. Final research project on open-ended problem solving.

34A. Calculus for Social and Life Sciences
(4) STAFF
Prerequisite: Mathematics 15 or the Algebra Diagnostic Test.

Not open for credit to students who have completed Mathematics 3A. Some instructors may require graphing calculators. Consult the department regarding specific model.

Introduction to differential and integral calculus with applications to modeling in the biological sciences.

34B. Calculus for Social and Life Sciences
(4) STAFF
Prerequisite: Mathematics 3A or 3AS or 34A with a grade of C or better.

Not open for credit to students who have completed Mathematics 3B or 3BS.

Continued study of differential and integral calculus with applications. Introduction to mathematical modeling with differential equations. Calculus of several variables including an introduction to partial derivatives.

91. Workshops in Mathematics
(1) STAFF

May be repeated for credit to a maximum of 4 units.

Group workshops affiliated with selected lower-division mathematics courses.

94. Group Studies in Mathematics
(1-4) STAFF
Prerequisite: consent of instructor.

Lectures and discussions on special topics.

UPPER DIVISION

100A. Mathematics for Elementary Teaching, I
(3) STAFF
Prerequisite: upper-division standing.

Course cannot be used to satisfy any mathematics major or minor requirements.

This class teaches ways to think about and explain elementary school mathematics. Topics include: cultural and base-n number systems, algorithms, elementary number theory, probability, and graphing.

100B. Mathematics for Elementary Teaching, II
(3) STAFF
Prerequisite: Mathematics 100A.

Course cannot be used to satisfy any mathematics major or minor requirements.

Completes the explanation of elementary school mathematics by discussing geometry and algebra. Discusses the pedagogy with the California Mathematics Framework, the NCTM Standards, and "replacement units."

101A. Classical Number Systems
(4) STAFF
Prerequisites: Mathematics 3A and 8.

Not open for credit to students who have completed Mathematics 118A.

Especially suitable for prospective teachers. A conceptual rather than an axiomatic development starting with the natural numbers and progressing through the integral, rational, real, and complex number systems. The historical implications of these developments in number systems.

101B. Mathematical Systems
(4) STAFF
Prerequisite: Mathematics 8 and 101A.

Not open for credit to students who have completed Mathematics 118A.

Especially suitable for prospective teachers. The theory of operations within rings and fields and the foundations of the real number system. Ideals, quotient rings, and factorization theorems. The history and the historical implications of these developments in mathematical systems.

102A-B. Modern Euclidean and Noneuclidean Geometry
(4-4) STAFF
Prerequisite: Mathematics 3B.

Especially suitable for prospective teachers. Topics in plane and solid geometry. The axioms of pure, Euclidean, projective, and noneuclidean geometry. Transformational geometry (isometries, dilitations, involutions, perspectivities, and projectivities). The history and the historical implications of these developments in geometry.

103. Introduction to Group Theory
(4) STAFF

Prerequisite: Mathematics 8.

Not open for credit to students who have completed Mathematics 111A.

Intended primarily for prospective teachers. Introduction to group theory. Permutation groups, cyclic groups, theory of finite groups, group homomorphisms and isomorphisms, and Abelian groups. Applications to number theory and geometry.

104A. Introduction Into Numerical Analysis
(4) STAFF

Prerequisites: Mathematics 5A-B-C; and, Computer Science 5FO or 11FO or 12 or 60.

Numerical methods for the solution of nonlinear equations (Newton method), for integration (quadrature formulas and composite integration), and for the initial value problem for ordinary differential equations (Euler and Kutta methods).

104B. Numerical Analysis
(4) STAFF

Prerequisite: Mathematics 104A.

Numerical methods for the solution of systems of linear equations (direct and interactive methods), and the finite difference methods for boundary value problems for (ordinary and partial) differential equations.

104C. Advanced Topics in Numerical Analysis
(4) STAFF

Prerequisite: Mathematics 104B

Topics in approximation theory; numerical methods for finding eigenvalues of a matrix; and advanced topics in numerical methods for ordinary and partial differential equations.

108A. Introduction to Linear Algebra
(4) STAFF

Prerequisites: Mathematics 5A and 8.

Review of vectors, matrices, systems of linear equations, and determinants; finite and infinite dimensional vector spaces, linear transformations, eigenvectors, and eigenvalues.

108B-C. Advanced Linear Algebra
(4-4) STAFF

Prerequisite: Mathematics 108A for Mathematics 108B; Mathematics 108B for Mathematics 108C.

Diagonalization, inner product spaces, projections, least-squares approximations, invariant factors and elementary divisors, canonical forms, topics from advanced matrix theory, applied linear algebra, and group representation theory.

109A-B-C. Introduction to Mathematical Logic
(4-4-4) STAFF

Prerequisites: Mathematics 8 or Computer Science 40 for Mathematics 109A; Mathematics 109A for Mathematics 109B; Mathematics 109B for Mathematics 109C.

Same course as Computer Science 109A-B-C.

An introduction to mathematical logic with applications in computer science and mathematics. Topics include propositional and predicate calculi; models; proof systems; decidability and undecidability; automated theorem-proving; unification; logic programming; and program verification.

111A. Introduction to Abstract Algebra
(4) STAFF

Prerequisite: Mathematics 108A.

An introduction to algebraic structures with an emphasis on groups.

111B-C. Abstract Algebra
(4-4) STAFF

Prerequisite: Mathematics 111A for Mathematics 111B; Mathematics 111B for Mathematics 111C.

Rings, fields, Galois theory.

113. Non-Euclidean Geometry
(4) STAFF

Prerequisite: Mathematics 8.

An introduction to hyperbolic geometry with some discussion of other non-Euclidean systems.

115A. Introduction to Number Theory
(4) STAFF

Prerequisite: Mathematics 8.

Divisibility, congruences, primitive roots and indices, quadratic residues and the quadratic reciprocity law, number-theoretic functions.

115B. Number Theory
(4) STAFF

Prerequisite: Mathematics 115A.

Diophantine equations, the distribution of primes, quadratic forms, continued fractions and the approximation of real numbers, algebraic number theory, partitions.

116. Combinatorial Analysis
(4) STAFF

Prerequisite: Mathematics 8.

Elementary counting principles, binomial coefficients, generating functions, recurrence relations, the principle of inclusion and exclusion, distributions and partitions, systems of distinct representatives, applications to computation.

117. Methods of Analysis
(4) STAFF

Prerequisite: Mathematics 8.

Introduction to methods of proof in analysis. Topics include limits, sequences and series, continuity, compactness, as well as other topics. This course is intended to follow Mathematics 8 and to introduce students to the level of sophistication of upper-division mathematics.

118A-B-C. Introduction to Real Analysis
(4-4-4) STAFF

Prerequisites: Mathematics 5A-B and 108A-B and 117 for Mathematics 118A; Mathematics 118A for Mathematics 118B; Mathematics 118B for Mathematics 118C.

The real number system, elements of set theory, continuity, differentiability, Riemann integral, implicit function theorems, convergence processes, and special topics.

119A. Ordinary Differential Equations
(4) STAFF

Prerequisites: Mathematics 5A-B.

Existence, uniqueness, and stability; the geometry of phase space; linear systems and hyperbolicity; maps and diffeomorphisms.

119B. Chaotic Dynamics and Bifurcation Theory
(4) STAFF

Prerequisites: Mathematics 5A-B-C.

Recommended preparation: Mathematics 119A.

Hyperbolic structure and chaos; center manifolds; bifurcation theory; and the Feigenbaum and Ruelle-Takens cascades to strange attractors.

122A-B. Introduction to Theory of Complex Variables
(4-4) STAFF

Prerequisites: Mathematics 5A-B for Mathematics 122A; Mathematics 122A for Mathematics 122B.

Complex numbers, functions, differentiability, series extensions of elementary functions, complex integration, calculus of residues, conformal maps, mapping functions, applications.

124A. Partial Differential Equations
(4) STAFF

Prerequisites: Mathematics 5A-B-C.

Wave, heat, and potential equations.

124B. Fourier Series and Numerical Methods
(4) STAFF

Prerequisites: Mathematics 5A-B-C.

Recommended preparation: Mathematics 124A.

Fourier series; generalized functions; and numerical methods.

130. Introduction to Mathematical Modeling
(4) STAFF

Prerequisites: Mathematics 5A-B; and, Computer Science 10 or one course from Computer Science 5AA-ZZ.

Introduction to the principles of mathematical modeling, both discrete and continuous. Students will complete a project where computer technology is used to explore the implications of an assigned model in depth.

132A. Introduction to Operations Research
(4) STAFF

Prerequisite: Mathematics 5A.

Linear programming, the simplex method, duality, applications to the transportation and assignment problems, sensitivity analysis, problem formulation.

132B. Introduction to Operations Research
(4) STAFF

Prerequisites: Mathematics 5B and 132A.

Network analysis: shortest route, minimal spanning tree and maximal flow problems; PERT including the critical path method; dynamic programming; game theory; integer programming, nonlinear programming.

132C. Introduction to Operations Research
(4) STAFF

Prerequisites: Mathematics 132A-B; and, PSTAT 120A or Economics 140A.

Same course as PSTAT 132C.

Review of probability; queuing theory; waiting models; birth and death processes; applications; inventive theory; Markov chains, applications and decision models; computer simulation; component and system reliability, decision analysis; list and area searching.

137A-B-C. Graph and Network Theory
(4-4-4) STAFF

Prerequisites: Mathematics 5A and 8 for Mathematics 137A; Mathematics 137A for Mathematics 137B; Mathematics 137B for Mathematics 137C.

Elements of graph and network theory including paths, circuits, trees, coloring, planarity, matching theory, Hall's Theorem, applications to scheduling theory, flows in networks, Menger's Theorem, and other topics as time permits.

144A. Discrete and Probabilistic Mathematical Modeling
(4) STAFF

Prerequisites: PSTAT 120A-B; and, Computer Science 5FO or 10; and Computer Science 11FO.

Fundamental modeling principles. Topics from: simulation, optimization, networks, decision trees, random walks and differential equations, Markovian Analysis, game theoretic models, applications.

144B. Continuous Mathematical Modeling
(4) STAFF

Prerequisites: Mathematics 5C or 104C; and Computer Science 10 and 11FO.

Differential equations, partial differential equations, and integral equation models. Topics selected from: derivation of model equations from first principles, conservation, solution techniques, both analytical and numerical, perturbation analysis, applications.

145. Introduction to Topology
(4) STAFF

Prerequisite: Mathematics 8.

Metric spaces, continuity, compactness, classification of surfaces, Euler characteristics, and fundamental groups. Additional topics at the discretion of the instructor.

147A-B. Introductory Differential Geometry
(4-4) STAFF

Prerequisites: Mathematics 5B; and, Mathematics 108A or 117 for Mathematics 147A; Mathematics 147A for Mathematics 147B.

Curves and surfaces in three-dimensional Euclidean space, first and second fundamental forms, Gaussian and mean curvature, geodesics, Gauss-Bonnet theorem, and non-euclidean geometry.

150A. Computability
(4) STAFF

Prerequisite: Mathematics 108A or 111A or 117.

Introduction to algorithmic systems and computable functions; Church's thesis; partial computable and total computable functions; decidability and undecidability; and background for Cook's Theorem.

150B. Complexity Theory
(4) STAFF
Prerequisite: Mathematics 150A.

Tractable and intractable problems; the class NP and NP-completeness; Cook's Theorem; resource-bounded reducibilities; and NP-complete problems in graph theory and combinatorics.

181A-B. Advanced Problem Solving: Mathematical, Historical, and Pedagogical Contexts
(4) STAFF
Prerequisites: Mathematics 5B and two upper-division mathematics courses for Mathematics 181A; Mathematics 181A for Mathematics 181B..

Designed for prospective teachers. Problem solving. Problems in number theory, dynamical systems, or other topics, including investigations of mathematics and its historical contexts. The difference between formal mathematics and the process of doing mathematics. Supervised field work on problem solving.

190. Special Topics in Mathematics
(4) STAFF
Prerequisites: upper-division standing; a lower-division mathematics course; consent of instructor.

May be repeated for credit, but only 8 units may be applied toward the major.

Information about the special topics to be presented may be obtained from the office of the Department of Mathematics.

193. Internship in Mathematics
(1-4) STAFF
Prerequisites: consent of instructor and department.

May be repeated for credit to maximum of 4 units, but no credit will be applied toward upper-division major.

Faculty-sponsored academic internship in industrial or research firms.

194. Group Studies for Advanced Students
(1-4) STAFF
Prerequisite: consent of instructor.

Enrollment normally limited to 12 or fewer students.

Lectures and discussion on special topics.

195A-B. Internship in Mathematics Teaching
(4-4)
Prerequisites: upper-division standing in the major; and two upper-division mathematics courses.

No credit allowed toward the major or minor.

Supervised mathematics teaching internship in local schools and participation in the Mathematics Teaching Seminar on mathematics learning and teaching. A paper on mathematics and its teaching required.

197A. Senior Thesis
(1-4) STAFF
Prerequisites: open to senior majors only; consent of department and instructor.

Students must have a minimum overall grade-point average of 3.0 and a 3.5 or better grade-point average in the major. Up to 4 units may apply to the major. Up to 8 units total in all Mathematics 197/199RA courses may apply toward the major.

Independent research under the supervision of a faculty member which will result in a senior thesis. Students will concentrate on reading and gathering material for a thesis.

197B. Senior Thesis
(1-4) STAFF
Prerequisites: Mathematics 197A; open to senior majors only; consent of department and instructor.

Students must have a minimum overall grade-point average of 3.0 and a 3.5 or better grade-point average in the major. Up to 4 units may apply to the major. Up to 8 units total in all Mathematics 197/199/199RA courses may apply toward the major.

Independent research under the supervision of a faculty member which will result in a senior thesis. Students will concentrate on writing a thesis

199. Independent Studies in Mathematics
(1-S) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in mathematics; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Only 8 units total in all Mathematics 197/199/199RA courses may apply toward the major.

Coursework shall consist of academic research supervised by a faculty member.

199RA. Independent Research Assistance
(1-4) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in mathematics; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 198/199/199RA courses combined. Only 8 units total in all Mathematics 197/199/199RA courses may apply toward the major.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

The department does not offer all the courses listed below each year, but does offer the following courses every year: Mathematics 201A-B-C, 220A-B-C, 226A-B-C, and a first-year graduate sequence in applied mathematics. The department offers approximately eight other one-year courses in mathematics each year.

201A-B-C. Real Analysis
(4-4-4) STAFF
Prerequisites: Mathematics 118A-B-C.

Topics in functions of a real variable, measure and integration and functional analysis.

202A-B-C. Complex Analysis
(4-4-4) STAFF
Prerequisites: Mathematics 118A-B-C or 122A.

A rigorous development of the more important topics in complex analysis.

206A. Matrix Analysis and Computation
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211A, ME 210A, ECE 210A, and Chemical Engineering 211A.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Graduate level matrix theory with introduction to matrix computations. SVDs, pseudoinverses, variational characterization of eigenvalues, perturbation theory, direct and interative methods for matrix computations.

206B. Numerical Simulation
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211B, ME 210B, ECE 210B, and Chemical Engineering 211B.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Linear multistep methods and Runge-Kutta methods for ordinary differential equations: stability, order and convergence. Stiffness. Differential algebraic equations. Numerical solution of boundary value problems.

206C. Numerical Solution of Partial Differential Equations—Finite Difference Methods
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211C, ME 210C, ECE 210C, and Chemical Engineering 211C.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Finite difference methods for hyperbolic, parabolic and elliptic PDEs, with application to problems in science and engineering. Convergence, consistency, order and stability of finite difference methods. Dissipation and dispersion. Finite volume methods. Software design and adaptivity.

206D. Numerical Solution of Partial Differential Equations—Finite Element Methods
(4) STAFF
Prerequisite: consent of instructor.

Same course as Computer Science 211D, ME 210D, ECE 210D, and Chemical Engineering 211D.

Recommended preparation: students should be proficient in basic numerical methods, linear algebra, mathematically rigorous proofs, and some programming language.

Weighted residual and finite element methods for the solution of hyperbolic, parabolic and elliptic partial differential equations, with application to problems in science and engineering. Error estimates. Standard and discontinuous Galerkin methods.

209. Set Theory
(4) STAFF
Prerequisite: consent of instructor.

Study of axiomatic set theory; topics include relations and functions, orderings, ordinal and cardinal numbers and their arithmetic, transfinite constructible sets, consistency and independence results of Gödel and Cohen.

212A-B-C. Harmonic Analysis
(4-4-4) PONCE
Prerequisites: Mathematics 122A-B-C.

Fourier transformation. Interpolation theorems. Riesz-Thorin and Marcinriewicz Theorems. Hardy-Littlewood maximal function. Singular integrals. Calderón-Zygmund theory. H^1&BMO. Multipliers. Pseudo-differential operators.

213A-B-C. Operator Theory
(4-4-4) PONCE
Prerequisites: Mathematics 201A-B-C.

Banach algebras and the spectral theorem for normal operators. Unbounded operators and special classes of operators. Elements of scattering theory. Friedrichs operators. Kato-Rosenblum theorem. Weyl-von Neumann theorem. Toeplitz and Wiener-Hopf operators. Contractive operators and dilation theory.

220A-B-C. Modern Algebra
(4-4-4) STAFF
Prerequisites: Mathematics 108A-B and 111A-B.

Group theory, ring and module theory, field theory, Galois theory, other topics.

222A-B-C. Topics in Group Theory
(4-4-4) STAFF
Prerequisites: Mathematics 108A-B and 111A-B-C.

May be repeated for credit with instructor and department approval.

Selected topics in group theory.

223A-B-C. Topics in Ring Theory
(4-4-4) STAFF
Prerequisites: Mathematics 108A-B and 111A-B-C.

May be repeated for credit with instructor and department approval.

Selected topics in ring theory.

225A-B-C. Topics in Number Theory
(4-4-4) STAFF
Prerequisites: Mathematics 220A-B-C.

May be repeated for credit with instructor and department approval.

Selected topics in number theory.

226A. Foundations of Topology
(4) STAFF
Prerequisite: Mathematics 118A.
Topological spaces, continuity, homeomorphisms, connectivity, compactness, subspaces, product spaces, quotient spaces, metric spaces, paracompactness, separation axioms, Urysohn's Lemma.

226B. Manifolds
(4) STAFF
Prerequisite: Mathematics 226A.
Topological manifolds, differential manifolds, inverse and implicit function theorems, Brown-Sard theorem, transversality, tangent bundles, normal bundles, bordism and cobordism, classification of low dimensional manifolds, handle body structures.

226C. Homotopy Theory
(4) STAFF
Prerequisite: Mathematics 226B or consent of instructor.
Homotopy groups, exact sequences, fiber spaces, covering spaces, van Kampen Theorem.

227A-B-C. Advanced Topics in Geometric and Algebraic Topology
(4-4-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit with instructor and department approval.
Topics, varying from year to year, include piecewise linear and differential topology, manifolds, fiber bundles and fiber spaces, homotopy theory, and spectral sequences.

228A-B-C. Topics in Functional Analysis
(4-4-4) STAFF
Prerequisites: Mathematics 201A-B-C.
Selected topics in functional analysis.

229A-B-C. Hilbert Space
(4-4-4) STAFF
Prerequisites: Mathematics 201A-B-C and 111A-B.
Operator theory, *-algebras of operators, both weakly closed (von Neumann algebras) and norm closed (C*-algebras). Unitary representations of locally compact groups and *-representations of C*-algebras.

231A-B-C. Lie Groups and Lie Algebras
(4-4-4) STAFF
Prerequisite: consent of instructor.
Differentiable manifolds, definition and examples of Lie groups, Lie group-Lie algebra correspondence, nilpotent and solvable Lie algebras, classification of semi-simple Lie algebras over the complexes, representations of Lie groups and Lie algebras, special topics.

232A-B-C. Algebraic Topology
(4-4-4) STAFF
Prerequisites: Mathematics 108A-B and 145.
Singular homology and cohomology, exact sequences, Hurewicz theorem, Poincare duality.

233A-B-C. Nonlinear Functional Analysis
(4-4-4) STAFF
Prerequisites: Mathematics 201A-B-C.
Minimax theorems, fixed-point theorems, multifunctions, convex analysis, variational analysis, optimization.

236A-B-C. Homological Algebra
(4) STAFF
Prerequisites: Mathematics 220A-B-C.
Algebraic construction of homology and cohomology theories, aimed at applications to topology, geometry, groups and rings. Special emphasis on Hom and tensor functors; projective, injective and flat modules; exact sequences; chain complexes; derived functors, in particular, Ext and Tor.

237A-B-C. Algebraic Geometry
(4-4-4) STAFF
Prerequisites: Mathematics 220A-B-C.
Affine/projective varieties, Hilbert's Nullstellensatz, morphisms of varieties, rational maps, dimension, singular/nonsingular points, blowing up of varieties, tangent spaces, divisors, differentials, Rieman-Roch theorem. Special topics include: elliptic curves, intersection numbers, Bezout's theorem, Max Noether's theorem.

240A. Manifolds and Differential Geometric Structures
(4) STAFF
Prerequisite: Mathematics 118A.
Manifolds, vector bundles, fiber bundles, differential forms and integration. Lie groups and Lie algebras, de Rham cohomology.

240B-C. Global Riemannian Geometry
(4-4) STAFF
Prerequisites: Mathematics 240A is prerequisite to 240B. Mathematics 240B is prerequisite to 240C.
Riemannian geometry, connections, and curvature. More advanced topics such as: Morse theory of geodesics, minimal surfaces, Laplace operator on a Riemannian manifold and Hodge's theorem.

241A-B-C. Topics in Differential Geometry
(4-4-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit with instructor and department approval.
Topics which vary from year to year, such as: minimal submanifolds of Riemannian manifolds, complex differential geometry, differential geometry of gauge theories.

243A-B-C. Ordinary Differential Equations
(4-4-4) STAFF
Prerequisites: Mathematics 118A-B-C.
Existence and stability of solutions, Floquet theory, Poincare-Bendixson theorem, invariant manifolds, existence and stability of periodic solutions, bifurcation theory and normal forms, hyperbolic structure and chaos, Feigenbaum period-doubling cascade, Ruelle-Takens cascade.

244A-B-C. Computational Fluid Dynamics
(4-4-4) STAFF
Prerequisites: Mathematics 204A-B-C.
Nonlinear hyperbolic conservation laws, Euler equations, shock capturing schemes, Navier-Stokes equations, multigrid method for elliptic equations.

245A-B-C. Methods of Applied Mathematics (Linear Theory)
(4-4-4) STAFF
Prerequisite: Mathematics 118A.
Ordinary differential equations with one and two point boundary data. Linear integral equations, Green's functions. Eigenvalue problems. Fourier integral. Partial differential equations. Equations with initial and boundary data, calculus of variations, applications to classical and quantum mechanics, electromagnetism, optics. Systems of differential equations, stability, feedback, optimal control, frequency domain methods, random processes and differential equations, analog and digital filters, unsteady behavior, applications to electrical and mechanical control systems.

246A-B-C. Partial Differential Equations
(4-4-4) STAFF
Prerequisites: Mathematics 201A-B-C.
First-order nonlinear equations; the Cauchy problem, elements of distribution theory and Sobolev spaces; the heat, wave, and Laplace equations; additional topics such as quasilinear symmetric hyperbolic systems, elliptic regularity theory.

250. Mathematical Logic
(4) STAFF
Prerequisite: Mathematics 109A-B.
Topics in mathematical logic including formal systems in the first-order predicate calculus. Godel's completeness and incompleteness theorems. The existence of unsolvable problems.

260AA-ZZ. Seminars in Mathematics
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.
Topics in algebra, analysis, applied mathematics, combinatorial mathematics, functional analysis, geometry, statistics, topology, by means of lectures and informal conferences with members of staff.

280. Surveys of Contemporary Mathematics
(2-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit.
An expository treatment of a topic of current interest in mathematics with sufficient detail to impart the flavor of the field. Where appropriate, applications to other fields of mathematics will be included. The course is designed for the nonspecialist in the area treated. The topics will vary from quarter to quarter.

500. Teaching Assistant Practicum
(1-4) STAFF
Prerequisites: appointment as teaching assistant and departmental approval.
No unit credit allowed toward degree.
Supervised teaching of undergraduate mathematics courses.

501. Teaching Assistant Training
(1-2) STAFF
Prerequisites: departmental and instructor approval.
No unit credit allowed toward degree.
Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

502. Teaching Associate Practicum
(1-S) STAFF
Prerequisite: appointment as associate and departmental approval.
No unit credit allowed toward degree.
Supervised teaching of undergraduate courses.

510. Reading for Area Examinations
(2-6) STAFF
Prerequisites: enrollment in M.A. or Ph.D. program; consent of instructor.

596AA-ZZ. Directed Reading and Research
(1-6) STAFF
Prerequisite: graduate standing and consent of instructor.
May be repeated for credit as determined by department chair.

598AA-ZZ. Master's Thesis Research and Preparation
(1-6) STAFF
Prerequisite: consent of instructor.
No unit credit allowed toward degree.

599AA-ZZ. Ph.D. Dissertation Preparation
(1-6) STAFF
Prerequisite: consent of instructor.
No unit credit allowed toward degree.

Media Arts and Technology

Interdepartmental Graduate Program in Media Arts and Technology
South Hall, Room 1409
Telephone (805) 893-5244

E-mail: info@mat.ucsb.edu
Web site: www.mat.ucsb.edu

Faculty

Media Arts and Technology Program

Visual and Spatial Arts faculty to be announced

Electronic Music and Sound Design faculty to be announced

Department of Art Studio

Faculty to be announced

Department of Computer Science

Kevin Almeroth, Ph.D., Georgia Institute of Technology, Assistant Professor, (computer networks and protocols, large-scale multimedia systems, performance evaluation, distributed systems)

Department of Electrical and Computer Engineering

B. S. Manjunath, Ph.D. University of Southern California, Associate Professor (image processing, computer vision, pattern recognition, artificial intelligence, neural networks, learning algorithms, content-based search in multimedia databases)

Sanjit Mitra, Ph.D. University of California, Berkeley, Professor (digital signal and image processing, computer-aided design and optimization)

Department of Music

JoAnn Kuchera-Morin, Ph.D. University of Rochester, Eastman School of Music, Professor (composition, sound synthesis and processing, multimedia opera)

Curtis Roads, Ph.D., University of Paris, Visiting Professor (composition, micro-sound synthesis, graphical synthesis, sound analysis and transformation, sound spatialisation, history of electronic music

The Media Arts and Technology Program (MAT) is an interdisciplinary and interdepartmental graduate degree program that offers the Master of Science and Master of Arts degrees in Media Arts and Technology. MAT is unique in the University of California system. The program serves as a focal point for multimedia education, engineering, research, and artistic production. Its distinguishing features are: arts and entertainment focus, interdisciplinary approach based on a core set of skills and knowledge that all MAT students should master, and emphasis on group projects in multimedia software development and artistic production. Students emerging from MAT will have interdisciplinary breadth but will also focus on an area of emphasis, according to their background and career interests.

Prospective students for the Fall 2001 quarter are strongly encouraged to visit the MAT web site at www.mat.ucsb.edu for the latest information.

MAT is designed to provide its students with concrete job skills that will allow them to work in artistic, technical, or producer/director capacities in the media industries of the 21st century. It fosters aesthetically trained engineers—the media technology inventors of the future. It trains electronic media artists who can work with a high degree of aesthetic and technical sophistication to enrich and enlarge our cultural heritage. It prepares thinkers for advanced studies in media technology, leading toward academic careers in this discipline.

MAT faculty coordinate with four UC Santa Barbara graduate departments: Art Studio, Computer Science, Electrical and Computer Engineering, and Music. Faculty advisors assist students in planning their first- and second-year electives depending upon their area of emphasis.

The program is intended for students who have a strong background in either the arts or technology (for example, visual arts, film/video, music, computer science, or electrical and computer engineering), and who wish to earn a degree that integrates art and engineering. Prospective students should be ambitious and curious about intermedia art and should be willing to work on group projects. The program attempts to accommodate a balance of students from the three areas of emphasis, which are multimedia engineering, electronic music and sound design, and visual and spatial arts.

Media Arts and Technology Courses

UPPER DIVISION

200B. Survey of Music and Technology
(4) ROADS
Prerequisite: consent of instructor.
Overview of music and technology, including historical aspects. Readings and exercises with a range of music software applications. Basics of Internet audio and evolving media, music production, business, technical, and aesthetic aspects.

200C. Survey of Media Technology
(4) STAFF
Lectures and technical readings on data signals and streams, events and timed data, signal representations and formats, compression and data reduction.

201A. Media Signal Processing
(4) MANJUNATH
Basic concepts in digital signal and image processing (transforms, convolutions, etc.), filter design, image enhancement and coding, digital video.

201B. Media Networks and Services
(4) ALMEROTH
Prerequisite: consent of instructor.
Recommended preparation: programming experience.
The class has two points of emphasis: protocols for multimedia data delivery and the development of delivery services. Topics include the latest Intern protocol and the use of these protocols to provided real-time, and streaming media.

201C. Media and Society
(4) STAFF
Comparison of electronic and traditional media. Topics: Impact of networks on art and commerce, social history of communication technologies. Notions of authorship, shifting role of corporations in an increasingly global economy. Impact of multi-user environments and virtual reality technology on society.

302. Animation and Modeling
(4) STAFF
Prerequisite: consent of instructor.
Overview of two and three dimensional computer animation and composing techniques. In addition to basic methodologies, specific areas covered will include modeling, animating, lighting, rendering, layering of images, filtering and keying. Readings from texts on modeling and compositing.

596A-B-C. Directed Research
(2-12, 2-12, 2-12) STAFF
Research, either experimental or theoretical, may be undertaken by properly qualified graduate student sunder the direction of a faculty member.

Medieval Studies

Medieval Studies Program,
Division of Humanities and Fine Arts,
Humanities and Social Sciences 4001;
Telephone (805) 893-2991

Advisory Committee Chair:
Louise Fradenburg

Medieval Studies Advisory Committee

Cynthia Brown, Ph.D. (French and Italian)

Jody Enders, Ph.D. (French and Italian)

Sharon Farmer, Ph.D. (History)

Louise Fradenburg, Ph.D. (English)

Carol L. Lansing, Ph.D. (History)

Carol Braun Pasternak, Ph.D. (English)

Harvey Sharrer, Ph.D. (Spanish and Portuguese)

Affiliated Faculty

C. Edson Armi, Ph.D. (History of Art and Architecture)

Juan Bautista Avalle-Arce, Ph.D. (Spanish and Portuguese)

Larry M. Ayres, Ph.D. (History of Art and Architecture)

Antonio Cortijo, Ph.D. (Spanish and Portuguese)

Francis A. Dutra, Ph.D. (History)

Richard D. Hecht, Ph.D. (Religious Studies)

R. Stephen Humphreys, Ph.D. (History)

Giorgio Perissinotto, Ph.D. (Spanish and Portuguese)

Alejandro Planchart, Ph.D. (Music)

Robert Potter, Ph.D. (Dramatic Art)

Dwight Reynolds, Ph.D. (Religious Studies)

Jon R. Snyder, Ph.D. (French and Italian)

Emeriti Faculty

Jeffrey B. Russell, Ph.D. (History)

Medieval studies is an interdisciplinary program in which European and Middle Eastern civilization of the Middle Ages can be explored from the viewpoints of many traditional subject areas: history, literature, religious studies, drama, art, and music. The student can build a program around one or two of these disciplines enriched by the others, or organize a program in which several subject fields are more or less balanced. In order to enhance the interdisciplinary nature of the major, the Medieval Studies Program has designed a series of cross-listed courses that will put students in touch with a number of medievalists both at UCSB and in the larger scholar community. Each year one upper-division course from another department that fulfills the requirements of the medieval studies major will be cross-listed as Medieval Studies 100 (A-Z). The instructor from that course will invite at least one professor from another UCSB department to guest teach a class; and the students in the Medieval Studies 100 (A-Z) will have the opportunity to attend a mini-conference, in which visiting scholars will give lectures on research topics relating to the subject of the course.

Although no graduate degrees are offered in medieval studies, the program offers a Graduate Certificate in Medieval Studies. All Ph.D. and M.A. candidates in the humanities are eligible to pursue this certificate, however it has been developed primarily for Ph.D. candidates whose dissertations focus on medieval subjects. To earn a Graduate Certificate in Medieval Studies the candidate must (1) be admitted by the Graduate Division, and (2) receive a passing grade in each of the following: Medieval Latin (Latin 103); one course in a vernacular, Western European or Middle Eastern medieval language (English 205, English 230, French 206, Spanish 222A, Spanish 222B, Portuguese 222, Religious Studies 148A, Religious Studies 148B, Religious Studies 148, Religious Studies 210); Paleography and/or Diplomatics (History 215S, History 215T); Medieval Studies 200A-B-C; 8 additional units in graduate courses on medieval topics. Students may petition to have appropriate courses from other institutions substituted for these requirements.

A series of lectures by distinguished medievalists from other universities in America and Europe, representing various disciplines, provides fresh intellectual perspectives to undergraduate medieval studies majors as well as to candidates for graduate degrees in medieval history, literature, art, music, and thought. In addition, undergraduate, graduate, and faculty medievalists meet periodically to hear and discuss scholarly papers and to exchange ideas about the many facets of medieval culture.

The UCSB Medieval Studies Program operates in close cooperation with the Medieval Academy of America, the Medieval and Renaissance Studies Center at UCLA, the International Congress on Medieval Studies, and the Renaissance Society of America.

Students with a bachelor's degree in medieval studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Program

Bachelor of Arts—Medieval Studies

Preparation for the major. History 4A-B. A reading knowledge of Latin and of at least one modern European language will be necessary for those who plan to continue their studies on the graduate level. In certain fields, Hebrew, Arabic, or Greek may be needed. For students not planning graduate work, a language is desirable but not required.

Upper-division major. Forty units from the following list, with the selection forming a coherent program that must be approved by a member of the medieval studies committee; Art History 105A-B-C-D-E-F-G-H-I-J-K-L-M-N, 107A; Comparative Literature 116, 120; Dramatic Art 160B; English 110A, 110B, 111, 115, 119, 152A-AS-B, 197 (when course content is appropriate to medieval studies); French 102, 106A, 130X, 131X, 132X, 133, 133X, 134AX, 135, 135X, 135XH, 136A, 136C, 136E, 136X, 137X, 138, 138X; German 120, 169; History 114A-B-C-P, 115, 115P-Q, 116, 117A-B-C-D-P, 119, 119Q, 121A-B, 145A-B, 155A; Italian 114X, 139X; Latin 103, 140; Medieval Studies 199; Music Performance Laboratories A148, A148S; Music 112A, 179; Portuguese 105A; Religious Studies 115C, 127B, 131C, 140A, 187, 188, 189B; Spanish 110A, 115A, 116, 118A, 119A, 122A-B, 183AA-ZZ (when course content is appropriate). Students may also submit petitions to the chair of the Medieval Studies Program to have other appropriate courses count towards the major.

Medieval Studies Courses

UPPER DIVISION

199. Independent Studies in Medieval Studies
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in medieval studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Special interdisciplinary study in medieval themes.

GRADUATE COURSES

200A-B-C. Interdisciplinary Approaches to Medieval Studies
(2) STAFF
Prerequisites: consent of instructor.

Students enroll in the course for the entire Academic year. They attend and write papers on two 2-hour colloquium each quarter. A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Medieval Studies 200C.

Students attend and write responses to papers by visiting lecturers on topics in various fields of Medieval Studies. Themes will vary from year to year.

Military Science (ROTC)

Military Science,
Division of Social Sciences,
Building 451;
Telephone (805) 893-3042
E-mail: milsci@sscf.ucsb.edu
Web site: www.milsci.ucsb.edu
Department Chair: LTC Clarence E. Taylor

Faculty

Clarence E. Taylor, M.M.A.S., U.S. Army Command and General Staff College, Lieutenant Colonel, Armor, Professor (military science)

The military science curriculum is a part of the Army Reserve Officers Training Corps (ROTC) program that leads to a commission as a second lieutenant in the Active Army, Army Reserve, or National Guard. Enrollment is open to qualified men and women.

The Army ROTC program is divided into two parts: (1) two years of lower-division subjects, or Basic Course, during which the student incurs no military obligation; and (2) two years of upper-division work, or Advanced Course, for selected students. Students in the Basic Course must complete six lower-division military science courses before they can be considered for the Advanced Course. Freshmen and sophomores will be given priority in registering for lower-division military science courses.

Students who were unable to take the Basic Course may receive equivalent ROTC credit for these classes by attending a summer session at a designated Army installation. Attendees at off-campus summer sessions are given a travel allowance and are paid for their period of camp attendance.

Admission to the Advanced Course is limited to selected students who meet all academic and physical requirements. Enrollees must sign a contract with the U.S. Army agreeing to complete the course and to accept an officer's commission, if one is offered. In return, students receive a tax-free grant of $200 per month for each school month they are enrolled in the program. In addition, students may be eligible to join the National Guard or Reserve and receive pay for attending one weekend meeting a month. In addition to the $200 per month stipend, cadets may compete for ROTC scholarships. The two, three, and four-year scholarships pay for tuition and books.

Students selected for the Advanced Course attend a six-week camp between their first and second year of Advanced ROTC. They are given a travel allowance and are paid for their period of camp attendance.

Students may not major in Military Science. ROTC students must work toward a baccalaureate degree offered by another university

department. After completion of the Advanced Course and upon obtaining a baccalaureate degree, students may be commissioned as second lieutenants in one of the specialties of the U.S. Army. Insofar as possible, the student's wishes and academic major will be considered in making assignments. Graduates are eligible for either active duty or part-time duty with the Army Reserve or National Guard. The period of active duty is normally three years. Students accepting ROTC scholarships incur a four-year active duty obligation. ROTC students who wish to obtain advanced degrees may be granted delays in reporting for active duty. Students commissioned as second lieutenants may request to serve with the National Guard or Reserve following three to six months of active duty.

The department also offers a general military science curriculum designed to conform to the academic pattern of the UCSB campus. For the student who does not wish to make the military a career, military science courses and the ROTC program will provide general career preparation. The department's lower-division curriculum provides valuable knowledge concerning the military history of the United States. Several lower-division courses can be used to satisfy the American History and Institutions requirement. The department's upper-division curriculum gives students both theoretical and practical leadership and management skills.

All department instructors can advise students on academic matters, the ROTC program, and financial aid. In addition, the ROTC enrollment counselor is available for discussion of special options such as the two-year program or the scholarship program. Several publications, including brochures and fact sheets, are available in the department office.

Military Science Courses

Leadership laboratory required for all advanced ROTC students to provide the opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

LOWER DIVISION

1A. Introduction to Military Science
(2) STAFF

Prerequisite: lower-division standing.

The study of the organization and function of the US Army. Includes the role of the army, reserve forces, officers, and non-commissioned officers. (F)

1B. Basic Leadership
(1) STAFF

Prerequisite: lower-division standing.

Orientation to effective leadership and leadership techniques. Management skills and human relations. Emphasis on military organizations and corporate structures. (W)

1C. Terrorism and Modern Warfare
(2) STAFF

Prerequisite: lower-division standing.

Terrorism and contemporary global conflicts in a survey of recent military history. Emphasis on aspects of modern warfare and the implications for the United States in the twenty-first century. (S)

2A. Orienteering
(1) STAFF

Prerequisite: lower-division standing.

Basic map reading and compass skills. Practical exercises in negotiating a land navigation course applied in the field. (F)

2B. Basic Survival
(1) STAFF

Prerequisite: lower-division standing.

Introduction to expedient life-saving and survival techniques used by the military. Students learn to apply first aid, procure food, and construct shelter. Course is not intended to certify students in CPR. (W)

2C. Basic Mountaineering
(1) STAFF

Prerequisite: lower-division standing.

Basic rapelling and mountaineering skills with emphasis on equipment, techniques, knots, and site selection. Students apply these skills during a field trip. (S)

6. Basic Military Science Field Study
(2) STAFF

Prerequisites: sophomore standing; consent of instructor.

Practicum in a field study environment. Classroom instruction on leadership techniques, military courtesy, discipline, customs, traditions of the service, and career opportunities. Lab work in military skills such as map reading, rifle marksmanship, tactics, first aid, drill and ceremony, and physical training. (F)

7. American Military History to 1900
(2) TAYLOR

Prerequisite: lower-division standing.

Survey of American military history from colonial origins through the end of the nineteenth century. Emphasis on the wars of a young republic through the Civil War and the frontier west. (S)

8. Twentieth Century Warfare
(2) TAYLOR

Prerequisite: lower-division standing.

Survey of military history from 1900 to present. Emphasis on the strategies and major battles of World War I and World War II. The rise of the United States as a global superpower. (W)

11. Vietnam: A Military History
(2) TAYLOR

Prerequisite: lower-division standing.

A survey history of American involvement in Vietnam, including the background of the Vietnamese conflict, the nature of US involvement, strategies, significant events, and the tactics used by the participants. (F)

12. Women and Minorities in the Military
(3) TAYLOR

Prerequisite: consent of instructor to finalize registration.

The study of the historical contributions women and minorities have made to the U.S. military. Portrays the commitment, leadership traits, qualities, obstacles, and personal sacrifices minorities and women have made in defense of America. Includes a broad range of historical situations that demonstrate their experience in the U.S. Army.

22. Basic Military Physical Conditioning
(1) FRANCE

Basic physical conditioning using the United States Army physical training program. Emphasis on cardio-vascular system and upper body strength. Focus towards Army Officer Training Corps cadets, although not limited to this group.

23. Advanced Military Physical Conditioning
(1) STAFF

Advanced United States Army fitness techniques for physical conditioning. Students learn how to conduct a physical conditioning program to ensure good health and fitness. Focus towards Army Officer Training Corps cadets, although not limited to this group.

99. Independent Studies
(1-5) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 grade-point average. May be repeated for credit to a maximum of 8 units. Students are limited to 5 units per quarter.

Selected research under the direction of a faculty member.

UPPER DIVISION

131. Principles of Leadership
(2) STAFF

Prerequisite: consent of department.

Enrollment limited to advanced ROTC cadets. Leadership laboratory required for all ROTC students.

The study of the principles of leadership, responsibilities, and basic qualities of a leader, leadership traits, and special problems of military leadership. The study of theories of management and organizational behavior and of the decision-making process. Additionally, familiarization with communication systems and procedures used in the military team. (F)

132. Advanced Tactical Theory
(2) STAFF

Prerequisite: Military Science 131.

The advanced study of tactical theory within the framework of the military team. Familiarization with small military unit organizations and tactics. Fundamentals of offensive and defensive operations and their applications. Includes one field trip as course requirement. Leadership laboratory required for all ROTC students. (W)

133. Principles of Military Instruction
(2) STAFF

Prerequisite: Military Science 132.

Introduction of military teaching techniques and principles of planning instruction. Familiarization with methods of instruction and practical application by the student, who is required to prepare several presentations which include teaching a lesson, and use of closed-circuit television for self-evaluation. Leadership laboratory required for all ROTC students. (S)

141. Military Management
(2) TAYLOR

Prerequisite: Military Science 133.

The study of fundamentals of decision making, command and control problems, staff relationships, evaluation of situations, and analysis of courses of action. Leadership laboratory required for all ROTC students. (F)

142. Fundamentals of Military Law
(2) TAYLOR

Prerequisite: Military Science 141.

The study of military law and the fundamental concepts of military judicial procedures contained in the Uniform Code of Military Justice; rules of evidence, pretrial and appellant procedures. Leadership laboratory required for all ROTC students. (W)

143. The Profession of Arms: Ethics and Reality
(2) TAYLOR

Prerequisite: Military Science 142.

An analysis of the profession of arms, stressing the necessity for ethical and unimpeachable conduct. To include: logistical problems and systems, subordinate-superior relationships, collective and individual training, lateral communication with peers, the role of warrant and non-commissioned officers, and customs and traditions of the U.S. Army. Leadership laboratory required for all ROTC students. (S)

190. Advanced Military Science Field Study
(4) TAYLOR

Prerequisite: Military Science 133.

Each student is placed in problem solving and decision making situations and required to respond with actions based upon knowledge gained in earlier courses in military science. (F)

199. Independent Studies in Military Science
(1-5) TAYLOR
Prerequisites: upper-division standing; completion of two upper-division courses in military science.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Open only to ROTC advanced course students approved by the chair.

Independent studies with the professor. To permit study on a subject agreed by the student and professor, not covered by regular course offerings. (F,W,S)

Molecular, Cellular, and Developmental Biology

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Division of Mathematical, Life, and Physical Sciences,
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Web site: lifesci.ucsb.edu/MCDB
Department Chair: Stuart Feinstein

Faculty

Roymarie Ballester, Ph.D., Albert Einstein College of Medicine, Assistant Professor (eukaryotic cell microbiology)

Rolf E. Christoffersen, Ph.D., UC Los Angeles, Associate Professor (plant molecular biology)

Louise Clarke, Ph.D., UC Santa Barbara, Professor (biochemistry and genetics)

Dennis O. Clegg, Ph.D., UC Berkeley, Professor (neurobiology)

James B. Cooper, Ph.D., Washington University, Associate Professor (plant biology)

Diane E. Eardley, Ph.D., UC Berkeley, Associate Professor (cellular immunology)

Stuart C. Feinstein, Ph.D., UC San Francisco, Professor (molecular cell biology and neurobiology)

Ruth R. Finkelstein, Ph.D., Indiana University, Associate Professor (plant biology)

Steven K. Fisher, Ph.D., Purdue University, Professor (neurobiology)

Kathleen Foltz, Ph.D., Purdue University, Associate Professor (cellular and molecular biology, marine invertebrate development)

David M. Kohl, Ph.D., State University of New York, Lecturer with Security of Employment, (developmental biology)

G. John Lew, Ph.D., University of Calgary, Assistant Professor (biochemistry, molecular biology, enzymology)

David A. Low, Ph.D., UC Irvine, Professor (microbiology)

Michael J. Mahan, Ph.D., University of Utah, Associate Professor (microbial pathogenesis)

Daniel Morse, Ph.D., Albert Einstein College of Medicine, Professor (molecular genetics, biochemistry, marine biology, developmental biology)

Stephen J. Poole, Ph.D., UC San Diego, Associate Professor (biochemistry, molecular biology)

Ian K. Ross, Ph.D., McGill University, Professor (cell biology, mycology)

Joel Rothman, Ph.D., University of Oregon, Associate Professor (developmental biology, genetics, biochemistry)

Charles E. Samuel, Ph.D., UC Berkeley, Professor (virology, biochemistry)

Duane Sears, Ph.D., Columbia University, Professor (biochemistry)

William C. Smith, Ph.D., UC Santa Cruz, Assistant Professor (vertebrate developmental biology)

Barry D. Tanowitz, Ph.D., UC Santa Barbara, Lecturer (evolutionary biology)

Carol A. Vandenberg, Ph.D., UC San Diego, Associate Professor (neurobiology)

J. Herbert Waite, Ph.D., Duke University, Professor, (marine biomolecular materials)

Leslie Wilson, Ph.D., Tufts University, Professor (biochemical pharmacology)

Emeriti Faculty

John A. Carbon, Ph.D., Northwestern University, Professor Emeritus

James Cronshaw, D.Sc., Ph.D., Leeds, Professor Emeritus

John E. Cushing, Ph.D., California Institute of Technology, Professor Emeritus

Ellis Englesberg, Ph.D., UC Berkeley, Professor Emeritus

Aharon Gibor, Ph.D., Stanford University, Professor Emeritus

Philip C. Laris, Ph.D., Princeton University, Professor Emeritus

Nancy L. Lee, Ph.D., University of Pittsburgh, Professor Emerita

Henry I. Nakada, Ph.D., Temple University, Professor Emeritus

Eduardo Orias, Ph.D., California Institute of Technology, Professor Emeritus

George Taborsky, Ph.D., Yale University, Professor Emeritus

Edward L. Triplett, Ph.D., Stanford University, Professor Emeritus

Affiliated Faculty

Benjamin E. Reese, Ph.D. (Psychology)

The Department of Molecular, Cellular, and Developmental Biology (MCDB) offers the bachelor of science degree in four departmental majors—biochemistry-molecular biology, cell and developmental biology, microbiology, and pharmacology. In addition, it cooperates with the Department of Ecology, Evolution, and Marine Biology in offering the interdepartmental biological sciences major, with both B.A. and B.S. objectives. The department offers graduate programs leading to the degrees of master of arts and doctor of philosophy, with emphasis in molecular, cellular, and developmental biology. An interdepartmental graduate program is offered in biochemistry and molecular biology, in cooperation with the Departments of Chemistry and Materials. In addition, a wide range of courses is available to all undergraduates for elective enrollment or for the support of their preparation for degrees in other departments or programs.

Molecular, cellular, and developmental biology majors provide excellent preparation for a wide variety of biology-related careers, including careers in the health sciences, biotechnology, the pharmaceutical industry, agriculture, environmental health and safety, food technology, and forensic science, and for research careers in academic, industry, and government laboratories. Many MCDB students prepare for entry into graduate or professional schools. Students should become familiar with the requirements of programs of interest, and then discuss their undergraduate coursework with their advisor. In general, all of the department's majors are suitable for students preparing for professional schools in medicine, veterinary medicine, dentistry, pharmacy, or nursing, and for graduate programs in biochemistry, cell biology, developmental biology, genetics, immunology, microbiology, molecular biology, neurobiology, pharmacology, or virology. Students with a bachelor's degree who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

The department undergraduate academic advisor is available for counseling on matters such as major requirements, course substitutions, petitions, and career and graduate school information. One faculty member serves each year as graduate advisor. The graduate program assistant helps graduate students in all matters related to their graduate study. Department publications are available from the undergraduate advisor and the graduate program assistant. Additional information is available at the MCDB web site at lifesci.ucsb.edu/MCDB.

Senior Honors Program

Students with outstanding academic records in biological sciences are encouraged to apply for the senior honors program early in the fall quarter of the senior year. The honors program centers on an independent research project carried out in one of the departmental research groups (MCDB and EEMB 199) and applications are available from the undergraduate advisor.

Undergraduate Program

Students are normally expected to complete all courses required in preparation for the major by the end of their sophomore year, but physics may be delayed until the junior year if necessary. Students with strong high school backgrounds are urged to complete their basic

preparation in general chemistry and mathematics during their freshman year. Students with weak mathematics preparation should make up this deficiency by completing intermediate algebra and trigonometry by correspondence through University Extension, preferably during the summer preceding enrollment at UCSB, or by completing Mathematics 15 at UCSB. As the requirements suggest, each major in the department is designed to emphasize a different area in biology.

Upper-division major courses offered on the P/NP-only basis may be taken for major credit to a maximum of 4 units total in any combination for pharmacology and the B.A. in biological sciences or a maximum of 8 units total for the other B.S. majors. All other courses for the major, both preparation and upper-division, must be taken for letter grades.

Pre-Biology

Students are not admitted directly into the following majors: Biochemistry-Molecular Biology B.S., Biological Sciences B.A. or B.S., Cell and Developmental Biology B.S., Microbiology B.S., and Pharmacology B.S. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing in one of these majors only after fulfilling the pre-major course and grade requirements listed below. *Note: Completion of the pre-major does not fully satisfy the preparation for the major requirements for any of the majors.* Students should review the full requirement sheet for the major they intend to declare and plan their schedules accordingly. Also note that acceptance into the pre-major does not guarantee admission to full major status.

Students may petition for advancement to full major status in any one of the majors as soon as they have completed the required minimum of twelve courses with a 2.0 or higher grade-point average in sections A, B, and C. At the time of the petition, they must also have a 2.0 or higher grade-point average in all courses attempted toward the major (preparation and upper-division). The P/NP grading option is not allowed for any pre-major courses. All must be completed on a letter-grade basis.

A. The following with a 2.0 or higher grade-point average: MCDB 1A-B, EEMB 2, 3.

B. The following with a 2.0 or higher grade-point average: MCDB 1AL, either MCDB 1BL or EEMB 2L, EEMB 3L

C. Five courses from the following with a 2.0 or higher grade-point average:

1. General Chemistry: Chemistry 1A or 2A, 1B or 2B, 1C or 2C. *(The entire three-quarter series and laboratories are required for all five majors.)*
2. Organic Chemistry: Chemistry 107A or 130A, 107B or 130B, 108 or 130C. *(Requirements vary among the five majors.)*
3. Calculus: Mathematics 3A or 34A, 3B or 34B *(Biochemistry-Molecular Biology requires Mathematics 3A-B and beyond; the other majors give a choice of Mathematics 3A-B or 34A-B).*
4. Statistics: EEMB 30 or PSTAT 5A. *(Not required for Biochemistry-Molecular Biology.)*
5. Physics: 6A *(Additional physics is required for all majors.)*

Note: Many upper-division MCDB and EEMB courses require a C or better in each prerequisite course. See individual course listings.

Bachelor of Arts—Biological Sciences

UCSB offers both a bachelor of arts (B.A.) and a bachelor of science (B.S.) degree in biological sciences. The B.A. degree is intended to provide flexibility in curriculum planning for students interested in obtaining a degree in biology accompanied by a broader background in the liberal arts. Either degree is acceptable to most graduate and professional schools. Students are encouraged to seek advice from biology faculty and academic advisors regarding which degree option is most appropriate to their career goals.

Students are not admitted directly into the biological sciences major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement. Note also that a single course, though listed in more than one area, can satisfy only one requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B, and either 107A-B or 130A-B; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL.

Upper-division major. Thirty-six upper-division units in biological sciences, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 121, 182, 183, 184. In addition, no more than 4 units of the following courses combined will apply to the major: EEMB 185-199, MCDB 185-199.

A. Genetics: MCDB 101A (MCDB 101B strongly recommended for students taking 101A) or EEMB 129

B. Physiology: One course or course sequence from MCDB 111, 114, 117; EEMB 141, 143, 154, 155, 156

C. Development and Cell Biology or Biochemistry and Molecular Biology: One course or course sequence from MCDB 103, 108A, 110, 112, 114 (if not used in Area B), 115, 118, 133, 134

D. Ecology or Evolution: One course or course sequence from EEMB 108, 109 (or Geology 148), 113-113L, 120, 131 (or Geology 121), 135, 137 (or Geology 141), 138, 140, 145C

E. Diversity of Form and Structure: One course or course sequence from EEMB 107, 111, 112, 113-113L (if not used in D above), 116, 134; MCDB 131, 137

F. Electives: Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology to bring unit total to 36.

Dennis Clegg

PROFESSOR, MOLECULAR, CELLULAR, & DEVELOPMENTAL BIOLOGY

Dennis Clegg, professor of molecular, cellular, and developmental biology, discovered his passion for life science in the forests of Minnesota. Walking amidst the wildlife, he realized that to understand biology, one must also understand the molecules that comprise cells and organisms. That personal discovery led him away from wildlife biology and into the lab, "where you can use the power of current technology to answer questions in biology," he explains.

"I want to convey my excitement to the students to make them see that biology isn't just boring facts but subject matter that's changing every day."

Such research and technology play a major role in his class presentations, which include discussions of the latest developments in research in neurobiology.

"I want to convey my excitement to the students to make them see that biology isn't just boring facts but subject matter that's changing every day. It will play an important role in their future."

Bachelor of Science—Biochemistry-Molecular Biology

This major is designed for students interested in the characteristics of the molecules and the molecular mechanisms involved in living systems. It is especially recommended for those planning graduate work in biochemistry, molecular biology, or microbiology.

Students are not admitted directly into the biochemistry-molecular biology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B-C, either 107A-107B-108 or 130A-B-C; Mathematics 3A-B-C followed by a fourth quarter of mathematics, with Mathematics 5A recommended; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight units, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 182, 183, 184. In addition, no more than 8 units of the following courses combined will apply to the major: EEMB 185-199, MCDB 185-199.

A. Genetics: MCDB 101A-B

B. Biochemistry: MCDB 108A-B-C

C. Biochemistry laboratory: MCDB 109L

D. Physical Chemistry: Chemistry 113A-B and either MCDB 123 or Chemistry 112 or 113C

E. Electives: additional courses from the following to bring the total upper-division units to 48: MCDB 101L, 103, 103L, 108AL, 111, 112, 112L, 114, 115, 117, 118, 119, 126A, 126AL, 126B, 126BL, 126C, 131, 131L, 132, 132L, 133, 133L, 134, 139, 140L, 167, 186 (or BMB 186), 187, 188, 192, 197, 198, 199; Chemistry 145

Bachelor of Science—Biological Sciences

UCSB offers both a bachelor of arts (B.A.) and a bachelor of science (B.S.) degree in biological sciences. The B.S. degree is intended for those students desiring a more focused and intensive curriculum in biology, including the development of laboratory skills. Either degree is acceptable to most graduate and professional schools. Students are encouraged to seek advice from biology faculty and academic advisors regarding which degree option is most appropriate to their career goals.

Students are not admitted directly into the biological sciences major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B and either 107A-B or 130A-B; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight units, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 121, 182, 183, 184. In addition, no more than 8 units of the following courses combined will apply to the major: EEMB 185-199, MCDB 185-199.

A. Genetics: MCDB 101A and MCDB 101B (MCDB concentration) or EEMB 129 and EEMB 130 (EEMB concentration)

B. One course or course sequence from each of the following. *Note: Courses listed in more than one section can be applied to only one section.*

1. Physiology: MCDB 111, 114, 117, 126A, 132 ; EEMB 141, 143, 151, 154, 155, 156

2. Developmental and Cell Biology: MCDB 103, 112, 114, 115, 118, 119, 133

3. Biochemistry and Molecular Biology: MCDB 108A, 110, 126B, 126C, 133, 134

4. Ecology: EEMB 120, 138, 140, 145C

5. Evolution: EEMB 108, 109 (or Geology 148), 113-113L, 131 (or Geology 121), 135, 136-136L (or Geology 111-111L), 137 (or Geology 141)

6. Diversity of Form and Function: EEMB 106, 107, 111, 112, 113-113L, 115, 116, 134; MCDB 131, 137

7. Laboratory: Either one of the underlined courses from sections 1-6 above or one of the following: MCDB 101L, 103L, 109L, 112L, 126AL (or EEMB 126AL), 126BL, 131L, 132L, 133L, 140L; EEMB 107L, 120AL-BL, 140L, 143L, 148L, 170

C. Electives: Additional upper-division courses offered within the Department of Ecology, Evolution, and Marine Biology and the Department of Molecular, Cellular, and Developmental Biology to bring the total to 48 units.

Bachelor of Science—Cell and Developmental Biology

Modern cell and developmental biology brings together a diverse group of disciplines and technologies linked by the common goals of understanding the nature and behavior of cells and how these cells work together to assemble an organism. Whereas some cell and developmental biologists may concentrate on the role that one particular molecule plays within cells, others study the way that many different molecules assemble into structures such as chromosomes or the nucleus, while others may examine how groups of cells interact to form systems of greater complexity, ultimately leading to the progression of a fertilized egg through the many stages of development to form an adult organism. The range of instruments and methods employed by cell and developmental biologists is equally diverse, including recombinant DNA technology, biochemistry, cell culture, genetics, light and electron microscopy, and many others.

The course requirements for the major in cell and developmental biology reflect the diversity within the field. Upper-division coursework includes work in genetics, cell biology, developmental biology (students may choose from among animal, plant, and neuronal development), biochemistry, and additional electives, including extensive laboratory experience. The major is designed to prepare students for graduate training in a wide range of molecular, cellular and developmental biology disciplines; medical, dental, nursing, optometry, and other health-related professions; and employment in the public or private sector (such as biotechnology) research communities.

Students are not admitted directly into the cell and developmental biology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling the pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL, 6A-B and either 107A-B-108 or 130A-B-C; Mathematics 3A-B or 34A-B, and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-eight units, distributed as follows:

Note: The following courses do not count toward upper-division major credit: EEMB 183, 184, MCDB 121, 182, 183, 184. In addition, no more than 8 units of the following courses combined will apply to the major: EEMB 185-199, MCDB 185-199.

A. Genetics: MCDB 101A-B

B. Biochemistry: MCDB 108A-B-C

C. Cell Biology: MCDB 103

D. Developmental Biology: Two courses from: MCDB 112, 115, 118,

E-1. One course from: MCDB 103L, 112L, 120L

E-2. One course or course sequence from: MCDB 101L, 109L, 126A-AL, 126B-BL, 132-132L, 133-133L, 140L

F. Electives: Additional upper-division courses offered within the Department of Molecular, Cellular, and Developmental Biology and the Department of Ecology, Evolution, and Marine Biology to bring unit total to 48 units.

Bachelor of Science—Microbiology

Microbiology has been and continues to be at the forefront in contributing to human welfare and to our understanding of the basic mechanisms of life processes. Three concentrations in microbiology are available.

General microbiology will provide the student with a broad knowledge of both procaryotic and eucaryotic microorganisms. Such a background will form the basis for understanding the relationships between the

various groups of microorganisms and their environment and the relationship of those microorganisms to human welfare. This program will stress the contribution of microbiology to our understanding of basic life processes, and will provide a background for careers in food, industrial, marine, and pharmacological microbiology, and for graduate work in microbiology.

Biomedical sciences, in addition to providing a basic training in microbiology, will also provide a specialized background for students whose careers lie in the fields of medical technology and for those who wish to pursue graduate work in medical or clinical microbiology.

Genetic engineering, in addition to providing a basic training in microbiology, will provide specialized training in the methodology of recombinant DNA research. This area of research is paving the way for a fundamental understanding of the nature of the eucaryotic gene and its regulation. It is also ushering in a revolution in the pharmaceutical industry in the production of hormones and other biologically useful agents.

Students are not admitted directly into the microbiology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling specified pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; Chemistry 6A-6B and either 107A-B-108 or 130A-B-C; Mathematics 3A-B or 34A-B and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-nine upper-division units required, distributed as follows: MCDB 101A-B, 108A-B-C, 131-131L, 132-132L, 133 (133L strongly recommended), 134, 135, plus 4 units from the following: MCDB 108AL, 133L, 137, 139, 140L, EEMB 111, 134. Students are encouraged to select their elective courses from within one of the tracks below.

A. General Microbiology: EEMB 134 and MCDB 108AL, 133L, 137

B. Bio-Medical Sciences: MCDB 108AL, 133L, 139 and EEMB 111

C. Genetic Engineering: MCDB 108AL, 133L, 140L

Bachelor of Science—Pharmacology

The emphasis in this major is on pharmacology as a basic science, rather than on the therapeutic principles of pharmacology. The curriculum content is designed to prepare students for careers in pharmaceutical research-and-development laboratories; the program also provides a strong background for graduate study in pharmacology.

Students are not admitted directly into the pharmacology major. Instead, they are first admitted to the pre-biology major, and they may advance to full major standing only after fulfilling the pre-major course and grade requirements. See section entitled "Pre-Biology" for details.

Note: Hyphens indicate that an entire course sequence must be completed as shown to fulfill an area requirement.

Preparation for the major. MCDB 1A-AL, MCDB 1B, EEMB 2, either MCDB 1BL or EEMB 2L, and EEMB 3-3L; Chemistry 1A-AL-B-BL-C-CL or 2A-AL-B-BL-C-CL; Chemistry 6A-B and either 107A-B-108 or 130A-B-C; Mathematics 3A-B or 34A-B and one of the following: PSTAT 5A or EEMB 30 or Mathematics 3C or Psychology 5; Physics 6A-AL-6B-BL-6C-CL.

Upper-division major. Fifty upper-division units, distributed as follows:

Note: No more than 16 total units may be taken outside the Department of Molecular, Cellular, and Developmental Biology. Courses that are cross-listed between MCDB and other departments do not count towards the 16-unit maximum. Instructor approval required prior to enrollment in psychology courses.

A. Pharmacology: MCDB 126A-AL-B-BL-C

B. Biochemistry: MCDB 108A-B-C or Chemistry 142A-B-C

C. Genetics: MCDB 101A-B

D. Additional courses from the following to bring the total upper-division units in the major to 50. MCDB 103, 108AL, 109L, 111, 112, 112L, 114, 115, 123, 131, 131L, 132, 132L, 133, 133L, 134, 135, 139, 140L, 186, 187, 192, 197, 198, 199; EEMB 111, 126MM, 154, 155, 156, 160; Chemistry 162, 181; Psychology 115, 133A, 133B, 137. *Note: A maximum of 4 units of the following courses allowed: MCDB 185-199.*

Students are encouraged to select their elective courses from within one of these tracks:

1. Molecular and Cellular Biology: MCDB 108AL, 112, 112L, 114, 115, 131, 131L, 132, 132L, 133, 133L, 134, 135, 139, 140L; EEMB 126MM, 144

2. Biochemical Pharmacology: MCDB 108AL, 109L, Chemistry 162, 181, EEMB 126MM

3. Neurobiology and Behavior: MCDB 114, 115, Psychology 115, 133A, 133B, 137

4. Physiology and Development: MCDB 111, 112, 112L, 114, 115; EEMB 111, 154, 155, 156

Graduate Program

Graduate-level research in the Department of Molecular, Cellular, and Developmental Biology (MCDB) spans a wide range of topics including biochemistry, cell biology, cell physiology, developmental biology, gene regulation, genetics, immunology, microbiology, molecular marine biology, neurobiology, pharmacology, plant molecular biology, plant physiology, and virology. The department offers graduate studies leading to the master of arts and doctor of philosophy degrees in molecular, cellular, and developmental biology. Candidates for graduate degrees must meet university degree requirements found in the chapter, "Graduate Education at UCSB," as well as departmental requirements.

Admission

In addition to fulfilling university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB," the applicant will normally hold a bachelor's degree in biology or a biological specialty area (such as biochemistry, cell and developmental biology, microbiology, molecular biology, physiology, or genetics). Undergraduate class work should include one year each of general biology, general chemistry, organic chemistry, calculus, and physics. Upper-division courses should include biochemistry, genetics, and additional specialized electives relevant to preparation for graduate work in molecular, cellular, and developmental biology.

Applicants with strong undergraduate records who lack some of the preparatory class work listed above may be admitted with the condition that they complete the necessary coursework early in their graduate careers.

The general test (verbal, quantitative, and analytical) of the Graduate Record Examination (GRE) is required of all applicants. One of the three following subject tests is also required: biochemistry, cell and molecular biology; biology; or chemistry.

Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) unless their language of undergraduate or graduate instruction was English. The minimum score for consideration is 610 when taking the paper-based test or 253 when taking the computer-based test, taken within two years of their application to UCSB.

Applications for admission must be received by January 8. Further details on admission to the MCDB graduate programs can be seen on the web site at lifesci.ucsb.edu/MCDB.

Requirements for the M.A.

A candidate for the master's degree must fulfill, in addition to general university requirements, the minimum lower- and upper-division requirements or their equivalents for the major in their field of emphasis. Students admitted with deficiencies must remedy them early in their graduate studies.

Two plans are available. Under Plan 1 (thesis), students are required to successfully complete (1) a research thesis; (2) the MCDB 218A-B-C core series (with a grade of B or better in each course); and (3) a minimum of 30 units of coursework. The units may be taken in graduate or upper-division courses in the department; at least 20 units will normally be in the 200 and 500 series, excluding 597 and 598. No unit credit is allowed for the thesis.

Under Plan 2 (examination), students are required to successfully complete: (1) the MCDB 218A-B-C core series (with a grade of B or better for each course); (2) at least two additional MCDB graduate lecture courses; and (3) a total of at least 36 units of MCDB graduate lecture courses and literature courses. Up to 6 units of MCDB 596 research coursework may count toward this total. Certain graduate lecture courses in the Interdepartmental BMB Program may be used as well (BMB 242, 245, 246, 254, 256A, 256B). Upper-division undergraduate lecture courses may also count

toward the degree with the approval of the graduate advisor. Units in the following courses may not be counted towards the degree: MCDB 260, 262, 263, 269, 290, 595.

Participation in the departmental research seminar program is expected of all MCDB graduate students.

Students admitted to the M.A.-only program may petition to transfer into a Ph.D. program only on the basis of compelling justification. Petitions will be acted upon by the appropriate admissions committee, and admission to the Ph.D. program will be based on the same criteria applied to applications from all other entering Ph.D. students. Successful transfer from M.A. to Ph.D. program will also depend on satisfactory progress in all graduate courses and written support by at least three faculty members. If the petition is approved, the student should consult with the appropriate graduate advisor regarding Ph.D. program requirements.

Students admitted to M.A./Ph.D. programs may petition the graduate committee to drop the M.A. requirements after a minimum of two quarters of graduate study. Petitions will be acted upon by the graduate advisor following review by the graduate committee, and action on such petitions will be contingent upon satisfactory progress in the graduate core course (MCDB 218A-B-C) and the written support of at least two faculty members. As with all other Ph.D. students, continuation in the Ph.D. program is also contingent upon the successful completion of two qualifying examinations, each consisting of a written research proposition followed by an oral defense of the proposition.

Requirements for the Ph.D.

Candidates for the degree of doctor of philosophy must normally have the bachelor's degree in biological sciences, with a preparation deemed equivalent to that required for the bachelor's degree from UCSB. Students who are admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses.

Students who entered the department with a specialization in biochemistry-molecular biology or physiology-cell biology prior to or during the 1992-93 year should consult the graduate advisor regarding the requirements of their respective programs. The following unified requirements, in addition to the dissertation, apply to all students entering the Ph.D. program after the 1992-93 academic year: (1) students must pass two qualifying examinations, each consisting of a written research proposition followed by an oral defense of the proposition. These examinations will normally be taken at the beginning of the second and third years of graduate study, respectively. The first proposition will deal with an area of molecular and cell biology distinct from the student's anticipated dissertation research, while the second proposition will be focused on the student's dissertation project; (2) the student must pass, with a grade of B or better, the MCDB 218A-B-C graduate core courses and one additional graduate level, non-seminar course; and (3) students are expected to participate fully in the seminar programs of the department (with the advice of the graduate advisor).

During each quarter of the student's graduate study, enrollment is also required in MCDB 260 (Research Seminar), and in MCDB 262 and 263 (Literature in Molecular Biology). In addition, enrollment in two graduate literature seminars per year in the 260 or 595 series is required until formal admission to candidacy for the Ph.D.

All doctoral candidates must qualify for and hold a teaching assistantship for the equivalent of two quarters as part of the preparation for the Ph.D. degree; take two qualifying examinations administered by the department; complete a doctoral dissertation under the general supervision of a committee; and defend their dissertation in a final oral examination. With the approval of the candidate's doctoral committee, a scheduled departmental seminar may be substituted in lieu of the final oral examination.

Interdepartmental Graduate Program in Biochemistry and Molecular Biology

For details see catalog entry under Biochemistry and Molecular Biology.

Molecular, Cellular, and Developmental Biology Courses

LOWER DIVISION

1A. Introductory Biology I
(4) CHRISTOFFERSEN, WILSON
Prerequisites: Chemistry 1A-B-C.
Not open for credit to students who have completed Biology 4A or MCDB 4A or 5A. Lecture, 4 hours.
Introduction to biochemistry, cell biology and development, and genetics. (F)

1AL. Introductory Biology Laboratory I
(1) STAFF
Prerequisites: Chemistry 1A-B-C; and, MCDB 1A (may be taken concurrently).
Not open for credit to students who have completed Biology 4A or MCDB 4A or 5AL. Laboratory, 3 hours.
Laboratory investigations illustrate basic principles of biochemistry, molecular and cell biology, development, and genetics. (F)

1AZ. Selected Topics from MCDB 1A
(1-3) STAFF
Prerequisite: consent of department.
Not open for credit to students who have completed Biology 4AZ or MCDB 4AZ or 5AZ. Lecture, 1-4 hours.
Designed for transfer students who have completed part of MCDB 1A through transfer work. Topics will be selected by the department, as appropriate, to fulfill the introductory biology requirement at UCSB. (F)

1B. Introductory Biology II—Physiology
(3) STAFF
Prerequisite: MCDB 1A; and Chemistry 1A-B-C.
Not open for credit to students who have completed Biology 4B or EEMB 4B or 5B or MCDB 4B or 5B. Lecture, 3 hours.
Introduction to animal and plant physiology. (W)

1BL. Introductory Biology Laboratory II
(1) STAFF
Prerequisites: MCDB 1A; and, concurrent enrollment in MCDB 1B or EEMB 2.
Same course as EEMB 2L. Not open for credit to students who have completed Biology 4B or EEMB 4B or 5BL or MCDB 4B or 5BL. Laboratory, 3 hours.
Laboratory investigations illustrate basic principles of animal and plant physiology, ecology, and evolution. (W)

1BZ. Selected Topics from MCDB 1B
(1-2) STAFF
Prerequisite: consent of department.
Not open for credit to students who have completed Biology 4BZ or EEMB 4BZ or 5BZ or MCDB 4BZ or 5BZ. Lecture, 1-4 hours.
Designed for transfer students who have completed part of EEMB 2 or MCDB 1B through transfer work. Topics will be selected by the department, as appropriate, to fulfill the introductory biology requirement at UCSB. (W)

4FS. Freshman Seminar
(1) VANDENBERG
Same course as EEMB 4FS. Not open for credit to students who have completed Biology 4FS.
Selected topics of special interest designed to display the broad diversity of the biological sciences. This course is strongly recommended for freshmen and/or prospective majors within the biological sciences. (F)

5DK. Freshman Seminar—Let's Talk
(1) KOHL
Prerequisite: freshmen only.
Not open for credit to students who have completed Interdisciplinary Studies 94S. Seminar, 1 hour.
Informal discussions on topics in biomedical ethics. Topics will include recombinant DNA technology, AIDS, euthanasia, abortion, doctor-patient relationships. (F,W,S)

20. Concepts of Biology
(4) TANOWITZ
Same course as EEMB 20. Not open for credit toward graduation to students who have completed Natural Science 1C. Not open for credit to students who have completed Biology 20, or Biology 4A-B-C; or MCDB 1A-AL, EEMB 2-2L or MCDB 1B-BL, or EEMB 3-3L. Lecture, 3 hours; discussion, 1 hour.
Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. (S)

21. The Immune System and AIDS
(4) EARDLEY
Not open for credit to students who have completed Biology 21. Lecture, 3 hours; discussion, 1 hour.
The basic properties of the immune system; the basic biology of AIDS and AIDS virus infection; and the biology of other sexually transmitted diseases. (S)

23. Biology of Cancer
(3) KOHL
Lecture, 3 hours.
An introduction to developments regarding the etiology and treatment of various cancers. Lectures compare normal cells and tissues with those which have become malignant. Discussion of causes, treatment, and prevention of specific cancers. (W)

24. Genetics and Human Disease
(3) KOHL
Lecture, 3 hours
Introduction to genetics with emphasis on humans. Topics focus on human diseases with strong evidence for genetic components. Diseases covered include cancer, cystic fibrosis, Huntington's, muscular dystrophy, and others. (S)

25. Human Anatomy
(4) TANOWITZ
Same course as EEMB 25. Not open for credit to students who have completed Zoology 25. Lecture, 3 hours; discussion, 1 hour.
Emphasis on fundamental structural and functional approaches of organ systems based on the human organism. Discussion of modern biomedical advances, techniques, and current topics in relation to their respective systems. (F,W)

25L. Laboratory in Human Anatomy
(4) TANOWITZ

Same course as EEMB 25L. Laboratory, 8 hours; discussion, 1 hour.

Emphasis on fundamental structural and functional approaches of organ systems based on the human organism. Discussion of modern biomedical advances, techniques, and current topics in relation to their respective systems. (W,S)

28. The Biology of Aging
(4) ROSS

Not open for credit to students who have completed Biology 28, or Biology 4A-B; or MCDB 1A-AL, EEMB 2-2L or MCDB 1B-BL. Lecture, 3 hours; discussion, 1 hour.

Concepts of cell, human, and population aging emphasizing biological research in aging problems and the social, ethical, and political consequences of aging studies. (S)

90A. Honors Forum in Molecular, Cellular, Developmental Biology
(2) KOHL

Prerequisites: honors standing in College of Letters and Science; consent of instructor. Seminar, 2 hours.

Seminar for selected students in Molecular, Cellular and Developmental Biology. Students will be introduced to research opportunities in the department. Focus will center on the use of the science library and the Internet as tools to produce a basic research paper. (F)

90B. Honors Forum in Molecular, Cellular, Developmental Biology
(2) KOHL

Prerequisites: honors standing in College of Letters and Science; consent of instructor. Seminar, 2 hours.

Continuation of MCDB 90A. Students are introduced to various faculty in the department and begin reading and reviewing some of the original literature in the field. Students are expected to critically analyze basic research papers. (W)

90C. Honors Forum in Molecular, Cellular, Developmental Biology
(2) KOHL

Prerequisites: honors standing in College of Letters and Science; consent of instructor. Seminar, 2 hours.

Continuation of MCDB 90B. Students meet with selected faculty in a defined area of research interest, attend various research seminars and laboratory meetings, and begin involving themselves with a research group. (S)

91A. Biological Aspects of Health and Disease I
(2) KOHL

Not open for credit to students who have completed Biology 91A. Seminar, 2 hours; discussion, 2 hours.

Focus on the treatment and prevention of common upper respiratory infections and coronary heart disease. Health professionals teach blood pressure measurement and throat culture skills. Students required to demonstrate patient educator skills. (F,W,S)

91B. Biological Aspects of Health and Disease II
(2) KOHL

Prerequisites: MCDB 91A; consent of instructor.

Not open for credit to students who have completed Biology 91B. Seminar, 1 hour; field, 5 hours.

Seminars emphasize the analysis and delivery of health information, elaborating upon topics initiated in MCDB 91A. Field placement is within Student Health Services as a patient educator in the Cold Care Clinic. Focusing upon upper respiratory infections, students will be required to take throat cultures. (F,W,S)

91C. Biological Aspects of Health and Disease III
(2) KOHL

Prerequisites: MCDB 91A; consent of instructor.

Not open for credit to students who have completed Biology 91C. Lecture, 1 hour; field, 5 hours.

Seminars emphasize the analysis and delivery of health information, elaborating upon topics initiated in MCDB 91A. Field placement is within Student Health Services as a patient educator in the Heart Care Clinic. Focusing upon prevention of cardiovascular disease, students will take blood pressure measurements. (F,W,S)

91D. Biological Aspects of Health and Disease IV
(1) KOHL

Prerequisites: MCDB 91A; consent of instructor.

May be repeated for credit to a maximum of 2 units. Lecture, 1 hour; field, 2 hours.

Seminars emphasize the analysis and delivery of health information, elaborating upon topics initiated in MCDB 91A. Field placement includes the provision of health information to student groups outside of Student Health Service, i.e. residence halls, organized groups, etc. (F,W.S)

92A. Special Topics in Biology
(1) FEINSTEIN

Prerequisites: concurrent enrollment in MCDB 1A; consent of instructor.

Students must participate in Biology Achievement Program. Not open for credit to students who have completed Biology 92A. Discussion, 1 hour.

An enrichment course for students considering careers in biomedical sciences or other biological sciences disciplines. (F)

92B. Special Topics in Biology
(1) FEINSTEIN

Prerequistes: concurrent enrollment in MCDB 1B and EEMB 2; consent of instructor.

Students must participate in Biology Achievement Program. Not open for credit to students who have completed Biology 92B. Discussion, 1 hour.

An enrichment course for students considering careers in the biomedical sciences or other biological sciences disciplines. (W)

98. Readings in Biology
(1-3) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students are limited to 6 units of Biology 98 and MCDB 98 combined. Tutorial, 1 hour.

Special readings on selected topics in biology. Individual conferences one hour every week. Designed to broaden the outlook and experience of advanced lower-division students. Hours and credit by arrangement with any member of the staff.

99. Introduction to Research
(1-3) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students are limited to 6 units of Biology 99 and MCDB 99 combined. Tutorial, 3-9 hours.

Laboratory experience for advanced lower-division students. Hours and credit by arrangement with any member of the staff.

UPPER DIVISION

Completion of all listed prerequisites with a grade of C or better (unless otherwise noted) is required for all upper-division courses.

101A. Molecular Genetics I: Prokaryotes
(4) LOW, MORSE

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; and Chemistry 1A-B-C. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 130A. Lecture, 3 hours; discussion, 1 hour.

From the double helix and genetic code to the latest breakthroughs. Structure, function, evolution and manipulation of DNA, RNA. Replication, expression, recombination, complementation and their regulation in prokaryotes (bacteria, plasmids, viruses). Recombinant DNA technology in medicine, research, agriculture, and industry. (F,W,SS)

101B. Molecular Genetics II: Eukaryotes
(4) CHRISTOFFERSEN, POOLE

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and MCDB 101A. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 130B. Lecture, 3 hours; discussion, 1 hour.

Mendelian and molecular genetics. Replication, recombination, transmission and expression of DNA in eukaryotic organisms from yeast to man. Uses of traditional genetics and modern molecular techniques, including molecular genetic approaches to the study of human disease. (W,S,SS)

101L. Molecular Genetics Laboratory
(3) CHRISTOFFERSEN, FINKELSTEIN

Prerequisite: MCDB 101A-B or EEMB 129; MCDB 101B (may be taken concurrently). Completion of all listed prerequisites with a grade of C or better. Laboratory, 8 hours.

Current molecular techniques used to study model genetic systems such as humans, Drosophila, C. elegans, yeast and Arabidopsis. Techniques include DNA extraction and analysis using PCR, restriction endonucleases, gel electrophoresis, DNA transformation and hybridization, computer analysis of genetic mapping data, and microscopy. (not offered 2000-2001)

103. Cell Biology
(4) CLEGG

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 137. Lecture, 3 hours; discussion, 1 hour.

An introduction to the structure and function of cell organelles: membranes, nucleus, mitochondria, chloroplasts, endoplasmic reticulum, golgi apparatus, lysosomes, microbodies, microtubules, cilia, centrioles, and microfilaments. (W)

103L. Laboratory in Molecular Cell Biology
(4) CLEGG

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and MCDB 103 (may be taken concurrently). Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 137L. Laboratory, 9 hours; discussion, 1 hour.

Laboratory techniques of modern cell biology; molecular dissection of cell structure and function. (S)

108A. General Biochemistry
(4) SEARS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; Chemistry 1A-B-C; and Chemistry 107A-B and 108, or Chemistry 130A-B-C. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 108A.

Recommended preparation: Chemistry 108. Lecture, 3 hours; discussion, 1 hour.

Chemistry of proteins; enzymic catalysis. (F)

108AH. General Biochemistry–Honors
(1) SEARS

Prerequisites: concurrent enrollment in MCDB 108A or 108AL; consent of instructor. Discussion, 2 hours.

Honors component of MCDB 108A designed to permit an in-depth consideration of selected aspects of the structure/function relationships of proteins and nucleic acids. (F)

108AL. Biochemistry Computer Laboratory
(2) SEARS

Prerequisite: MCDB 108A (may be taken concurrently).

Recommended preparation: Mathematics 3A-B or 34A-B. Lecture, 1 hour; laboratory, 2 hours.

Computer laboratory analysis of biochemical

structures and the dynamics of their interactions with other molecules. (F)

108B. General Biochemistry
(4) LEW

Prerequisite: MCDB 108A with a grade of C or better.

Not open for credit to students who have completed Biology 108B. Lecture, 3 hours; discussion, 1 hour.

Cellular biochemistry; metabolic pathways responsible for the generation of cellular energy and the biosynthesis of, and localization of, cellular components; biochemistry of transmembrane signaling and cancer; metabolic regulatory mechanisms. (W)

108C. General Biochemistry
(4) STAFF

Prerequisites: MCDB 108A-B both with a grade of C or better.

Not open for credit to students who have completed Biology 108C. Lecture, 3 hours; discussion, 1 hour.

Chemistry and metabolism of nucleic acids; nucleotide metabolism; biochemical aspects of chromosome structure, replication, and function. (S)

109L. Laboratory in Biochemistry
(4) POOLE

Prerequisites: MCDB 108A or Chemistry 142A; and, MCDB 1A (or 5A) and, EEMB 2 (or 5B) or MCDB 1B (or 5B). Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 109L. Laboratory, 6 hours; tutorial, 6 hours.

Laboratory techniques in biochemistry. Emphasis on techniques used in modern protein and nucleic acid biochemical research. Includes aspects of the use of computer analysis and recombinant DNA techniques in modern biochemistry. (S)

110. Principles of Biochemistry
(4) ROTHMAN

Prerequisites: Chemistry 1A-B-C and 107A-B. Completion of all listed prerequisites with a grade of C or better.

Not for specialized majors in molecular, cellular, and developmental biology, physiology, or students who have completed Biology 108A-B-C or MCDB 108A-B-C. Not open for credit to students who have completed Biology 118. Lecture, 3 hours; discussion, 1 hour.

An introduction to molecular structures and mechanisms of living systems. (S)

111. Introduction to Physiology
(4) SMITH

Prerequisite: MCDB 1A; and, MCDB 1B and EEMB 2. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 100. Lecture, 3 hours; discussion, 1 hour.

Structural and functional characteristics of membranes in relation to cellular communication. Study of the electrical properties of the hormonal visceral motor pathways of the central nervous system and some neural and hormonal visceral motor pathways. (F)

112. Developmental Biology
(3) FOLTZ

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and, EEMB 3 and MCDB 101A. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Zoology 100. Lecture, 3 hours.

Modern aspects of animal development. Molecular and cellular mechanisms of embryogenesis. (W)

112L. Laboratory in Developmental Biology
(2) FOLTZ

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and, EEMB 3 and MCDB 101A; and concurrent enrollment in MCDB 112. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Zoology 100L. Laboratory, 3 hours; discussion, 1 hour.

Modern laboratory techniques in developmental biology. Experimental approaches to development using several animal model systems. (W)

114. Neurobiology I
(4) FISHER, JOHNSON, VANDENBURG

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and, EEMB 3. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 105. Lecture, 3 hours; discussion, 1 hour.

Properties of the nervous system ranging from single cells to the whole organism, using examples from vertebrates and invertebrates studied in terms of morphology, physiology, and behavior. (F)

115. Developmental Neurobiology: A Molecular and Cellular Perspective
(4) STAFF

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; and, MCDB 101A or EEMB 129. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 106. Lecture, 3 hours; discussion, 1 hour.

The course begins with fertilization and moves through sequential stages in the development of the nervous system, including cell migration and differentiation, axon outgrowth and pathfinding, programmed cell death, synaptogenesis, learning, memory, neurodegenerative conditions and current strategies for neuronal regeneration. (S)

117. Plant Physiology
(4) COOPER

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and, Chemistry 107A-B and 108, or Chemistry 130A -B-C. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 110 or Botany 120. Offered Spring, odd-numbered years. Lecture, 3 hours; discussion, 1 hour.

Exploration of the function of higher plants, including transport, photosynthesis, hormonal regulation, stress tolerance, and plant-microbe interactions.

118. Plant Development
(4) FINKELSTEIN

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and, MCDB 101A or EEMB 129. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 112 or Botany 111. Lecture, 3 hours; discussion, 1 hour.

Differentiation and morphogenesis of plants: mechanisms of control by genetic and environmental factors, plant growth regulators, and cell-cell interactions. (Not offered 2000-01)

119. Plant Molecular Biology
(3) CHRISTOFFERSEN, COOPER, FINKELSTEIN

Prerequisites: MCDB 108A-B-C or 110; and MCDB 101A-B. Completion of all listed prerequisites with a grade of C or better.

Not open to students who have completed Biology 115. Lecture, 3 hours.

The molecular biology of vascular plants. Emphasis on the molecular mechanisms by which external and internal factors control development. Plant-microbe interactions and practical applications of transgenic plants will also be considered. (Not offered 2000-01)

120L. Laboratory in Plant Physiology and Development
(3) COOPER, FINKELSTEIN

Prerequisite: MCDB 118 or MCDB 117 (may be taken concurrently).

Not open to students who have completed Botany 112L. Laboratory, 8 hours.

Experiments using classical and molecular approaches to plant physiology and development. (Not offered 2000-01)

121. Ethics of Biomedical Technology
(3) GIBOR, KOHL

MCDB and EEMB majors cannot get major credit for course. Lecture, 2 hours; discussion, 1 hour.

An interdisciplinary approach to questions raised by advances in biotechnology including advances in human reproduction, definitions of "human life," the right to die, organ transplantation and donation, and animal rights. Discussants will include biologists, ethicists, and religious leaders. (F)

123. Experimental Strategies in Physical Biochemistry
(4) WAITE

Prerequisite: MCDB 108A with a grade of C or better. Lecture, 3 hours; discussion, 1 hour.

Presentation of selected contemporary concepts and methodologies for determining the structure, size, shape, charge, and interactive behavior of biological macromolecules. (S)

126A. Basic Pharmacology
(4) STAFF

Prerequisites: MCDB 101A (may be taken concurrently) or Chemistry 142C; and, Chemistry 130A-B-C, or 107A-B and 108. Completion of all prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 119A, EEMB 126A, or EEMB 164. Lecture, 3 hours; discussion, 1 hour.

Designed to provide the student with a comprehensive knowledge of the history and scope of pharmacology as a basic science. Emphasis on the principles of drug action and the relationship of pharmacology to physiology, chemistry, and biochemistry. (F)

126AL. Pharmacology Lab I
(4) STAFF

Prerequisite: MCDB 126A (may be taken concurrently).

Not open for credit to students who have completed Biology 119AL, EEMB 126AL, or EEMB 164L. Laboratory, 9 hours; discussion, 1 hour.

Analysis of drug sites and mechanisms of action using isolated tissues, organs, and intact animal preparations. (F)

126B. Basic Pharmacology
(4) VANDENBURG

Prerequisites: MCDB 101A or Chemistry 142C; and, Chemistry 130A-B-C, or 107A-B and 108. Completion of all prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 119B.

Recommended preparation: MCDB 108A. Lecture, 3 hours; discussion, 1 hour.

Receptor signaling mechanisms; pharmacology of neurotransmitter and hormone receptors; molecular and cellular mechanisms of drug-receptor interactions. (W)

126BL. Pharmacology Laboratory II
(4) VANDENBURG

Prerequisite: MCDB 126B (may be taken concurrently).

Not open for credit to students who have completed Biology 119BL. Laboratory, 9 hours; discussion, 1 hour.

An introduction to molecular and biochemical techniques in pharmacology; drug-receptor binding; receptor isolation; pharmacokinetics; techniques to evaluate potency, concentration and effects of hormones and their receptors. (W)

126C. Basic Pharmacology
(4) WILSON

Prerequisites: MCDB 101A or Chemistry 142C; and, Chemistry 130A-B-C, or 107A-B and 108. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 119C.

Recommended preparation: MCDB 108A. Lecture, 3 hours; discussion, 1 hour.

Fundamental principles of pharmacology, drug-receptor theory, biochemical mechanisms of action of drugs. (S)

131. General Microbiology
(4) COOPER, ROSS

Prerequisites: MCDB 101A (may be taken concurrently); and, Chemistry 107A-B and 108, or Chemistry 130A-B-C, or Chemistry 107A-B and MCDB 110, or Chemistry 130A-B and MCDB 110. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 104 or 104A. Lecture, 3 hours; discussion, 1 hour.

An introduction to the biological properties of microorganisms; the historical foundations of the field of microbiology; a study of the major groups of microorganisms, their structure, physiology, cultivation, and pathogenicity. (F)

131L. Laboratory in General Microbiology
(2) COOPER

Prerequisite: MCDB 131 (may be taken concurrently).

Not open for credit to students who have completed Biology 104 or 104L. Laboratory, 6 hours.

Laboratory experiments dealing with the isolation, cultivation, and physiological, biochemical and genetic analysis of diverse microorganisms. (F)

132. Bacterial Pathogenesis
(3) MAHAN

Prerequisites: MCDB 101A with a grade of C or better; and, concurrent enrollment in MCDB 132L.

Not open for credit to students who have completed Biology 128.

Recommended preparation: MCDB 131. Lecture, 3 hours.

The mechanisms by which bacterial pathogens cause disease. Investigation of the bacterial gene products that are produced during infection to understand the metabolic, physiological, and genetic factors that contribute to the virulence of bacterial pathogens. (W)

132L. Bacterial Pathogenesis Laboratory
(3) MAHAN

Prerequisite: concurrent enrollment in MCDB 132.

Not open for credit to students who have completed Biology 128L. Laboratory, 6 hours; discussion, 1 hour.

The latest molecular, biochemical, and genetic techniques available for the identification of microbial gene products that contribute to infection. Study of the regulatory parameters that govern their expression. (W)

133. Molecular and Cellular Immunobiology
(5) SEARS

Prerequisite: MCDB 101A with a grade of C or better.

Not open for credit to students who have completed Biology 123. Lecture, 4 hours; discussion, 1 hours.

Introduction to the current concepts of immunology. Emphasis on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex and cytokines in regulating immune responsiveness. (W)

133H. Immunobiology—Honors
(1) SEARS

Prerequisite: concurrent enrollment in MCDB 133. Discussion, 2 hours.

Honors component of MCDB 133 focusing on selected aspects of the immune system and its components using a web browser to run interactive computer assignments. (W)

133L. Molecular and Cellular Immunobiology Lab
(3) EARDLEY

Prerequisite: MCDB 133 with a grade of C or better (may be taken concurrently).

Not open for credit to students who have completed Biology 123L. Laboratory, 6 hours.

Introduction to modern laboratory methods in immunology; properties and characterization of immunoglobulins and immunoglobulin-secreting cells; introduction to hybridoma technology; characterization of effector and regulatory T cells using functional assays. (S)

134. General Animal Virology
(4) SAMUEL

Prerequisite: MCDB 101A or EEMB 129 with a grade of C or better.

Not open for credit to students who have completed Biology 122. Lecture, 3 hours; discussion, 1 hour.

An introduction to the biology of animal viruses with emphasis on the biochemical and biophysical properties of viruses; the mechanisms by which animal viruses replicate; the cellular effects of and response to viral infection; and selected aspects of medical virology. (S)

134H. General Animal Virology-Honors
(2) SAMUEL

Prerequisites: MCDB 101A and 134 both with a grade of C or better; consent of instructor.

Not open for credit to students who have completed Biology 122H. Lecture, 1 hour; discussion, 1 hour.

Honors virology course designed to permit an in-depth consideration of selected aspects of the biology of animal viruses; the mechanisms by which animal viruses replicate; and the cellular effects of and response to viral infection. (Not offered 2000-01)

135. Cellular Growth Control and Oncogenesis
(4) BALLESTER

Prerequisites: MCDB 101A-B both with a grade of C or better.

Not open for credit to students who have completed Biology 138. Lecture, 3 hours; discussion, 1 hour.

Focus on mechanisms of growth control in eukaryotes. Topics include: the properties of mammalian cells in culture and how they relate to malignant cells, growth factors and their receptors, cell cycle control, oncogenes and tumor suppressor genes. (F)

136H. Cytokine Action and Viral Pathogenesis
(2) SAMUEL

Prerequisites: MCDB 101B and 134. Lecture, 1 hour; discussion, 1 hour.

Honors virology course designed to permit an in-depth consideration of selected aspects of the mechanisms of action of cytokines, with emphasis on the antiviral properties of interferons and their roles in host response to viral infection and viral pathogenesis. (S)

137. Biology of Fungi
(4) ROSS

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3; and MCDB 101A. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 173. Lecture, 3 hours; laboratory, 3 hours.

Morphology, development, and genetic systems of fungi and allied protists. The significance of the uniqueness of fungal sexual and genetic mechanisms and the interactions between fungi and other organisms will be stressed, with experimental, biotechnology, and medical aspects emphasized. (Not offered 2000-01)

138. Medical Immunology
(4) SEARS

Prerequisite: MCDB 133 with a grade of C or better. Lecture, 2 hours; laboratory, 2 hours.

Interplay between the immune system and human disease is mechanistically evaluated by examining protective immunity against parasites and cancer, and immune dysfunction in transplantation, allergic, and autoimmune diseases, and AIDS. Computer exercises evaluate medical, case-based studies of human immune disorders. (Not offered 2000-01)

139. Medical Microbiology
(3) EARDLEY

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 129. Lecture, 3 hours.

Study of the characteristics of bacteria and viruses, both pathogenic and adventitious, as they are associated with diseases of humans. (F)

140L. Recombinant DNA Methods
(4) SMITH

Prerequisites: MCDB 101A-B and 110; or, MCDB 101A-B and 108A-B; and, concurrent enrollment in MCDB 108C. Completion of all listed prerequisites with a grade of C or better.

Not open for credit to students who have completed Biology 132. Laboratory, 6 hours; tutorial, 6 hours.

Basic techniques in molecular cloning. Screening of recombinant cDNA libraries, polymerase chain reaction, restriction endonucleases, gel electrophoresis, DNA sequencing, nucleic acid hybridization. (S)

145. Macromolecules from Marine Organisms
(4) WAITE

Prerequisite: MCDB 108A.

Structure/function relationships in interesting macromolecules isolated from marine organisms. Focus will be on well-characterized pathways from horseshoe crabs, abalones, mussels, and fish as well as others. (F)

149. Mariculture for the 21st Century: Research Frontiers
(4) MORSE, CHAPMAN, COLLINS

Prerequisite: upper-division standing.

Same course as EEMB 149. Not open for credit to students who have completed Biology 149. Lecture, 3 hours; discussion, 1 hour.

Recent progress and new directions in research increasing production of valuable marine animals, plants and microorganisms. Control of reproduction, development, growth and disease in marine species; problems encountered in commercializing production; regional and biological solutions; the role of modern biotechnology. (S)

167. Advanced Topics in Immunobiology
(2) SEARS

Prerequisite: MCDB 133 with a grade of C or better; and consent of instructor.

Not open for credit to students who have completed Biology 124. Seminar, 2 hours

Discussion of an advanced topic in immunology during a weekly two-hour roundtable seminar. Students write and present a critique of a recent immunological publication. (Not offered 2000-01)

167H. Immunobiology–Honors
(1) SEARS

Prerequisites: concurrent enrollment in MCDB 167; and consent of instructor.

Honors component of MCDB 167 designed to permit in-depth consideration of selected aspects of the immune system and its basic constituents. (Not offered 2000-01)

182. Introduction to Health Care Delivery
(2) KOHL

Prerequisites: upper-division standing.

Students must have a minimum 3.0 grade-point average. Not open for credit to students who have completed Biology 191. Lecture, 1 hour; laboratory, 3 hours.

Course conducted at UCSB and Santa Barbara Medical Foundation Clinic involves a series of lectures by UCSB faculty and Clinic physicians discussing health care delivery. Students also spend three hours per week "on call" with medical or surgical specialist at Clinic or hospital. (F,W,S)

183. Introduction to Teaching in Biology
(1-S) STAFF

Prerequisites: upper-division standing; consent of instructor.

May be repeated for credit to a maximum of 5 units in combination with EEMB 183 but no units may be applied toward the major.

Students will assist instructor in teaching course in which the student previously received a grade of

A- or better. Activities will be determined in consultation with the instructor and may include leading discussion, laboratory, or tutorial section(s), attending lectures and grading exams.

184. Internship in Biological Sciences
(1-5) STAFF

Prerequisites: upper division standing; consent of instructor and department.

Students must have a 2.5 cumulative grade-point average. May be repeated for credit to a maximum of 15 units, but no units may be applied toward the major (except Aquatic Biology. See restrictions in major narrative). Field, 5-25 hours.

Opportunity to obtain practical biological related research experience by working under faculty direction as an intern with local, state, federal, or private agencies. A written report will be submitted for evaluation.

186. Colloquia in Biomedical Research
(1) KOHL

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3. Completion of all listed prerequisites with a grade of C or better.

May be repeated for credit in combination with Biology 195 and BMB 186 to a maximum of 3 units.

Lectures by UCSB faculty from various departments focused on their current research in a variety of biomedical disciplines. (F,W,S)

187. Pharmacology Colloquia
(1) JACOBS, WILSON

Prerequisites: MCDB 1A; and, MCDB 1B and EEMB 2; and EEMB 3.

Same course as EEMB 187. May be repeated for credit to a maximum of 4 units, but only 2 units may be applied toward the major. Seminar, 1 hour.

Lectures on active research programs in pharmacology in the federal, state, and private research sectors. (W,S)

188. Literature in Plant Molecular Biology
(1) CHRISTOFFERSEN, COOPER, FINKELSTEIN

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 168. Seminar, 1 hour.

Critical reading and presentation of the current literature in plant molecular biology, cell biology and development. (Not offered 2000-01)

192. Special Topics
(1-4) STAFF

Prerequisites: upper-division standing in biology and consent of instructor or department.

May be repeated for credit in combination with Biology 192 and EEMB 192. Maximum units for credit in major: 8 for B.S.; 4 for B.A. Lecture, 1 to 4 hours.

Special topics of current importance in biological sciences. Course content will vary. Information may be obtained in department office.

194AA-ZZ. Group Studies for Advanced Students
(2) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit in combination with Biology 194AA-ZZ and EEMB 194AA-ZZ to a maximum of 8 units. Individual letter designations may be repeated for credit to a maximum of 4 units. Maximum units for credit in major: 8 for BS; 4 for BA. See also credit limits with other courses in description of major requirements. Seminar, 2 hours.

Oral reports by students.

A-B. Biochemistry-Molecular Biology: Staff
BC. Biochemistry-Molecular Biology: Cooper
BG. Bacterial Genetics: Low
DM. Molecular Marine Biology and Marine Biotechnology: Morse
DS. Molecular and Cellular Immunology: Sears
DV. Developmental Biology: Smith
EO. Genetics: Orias
MP. Microbial Pathogenesis: Mahan
RF. Plant Development Genetics: Finkelstein
V. Mycology: Ross
X. Cell Biology: Foltz

197. Directed Studies
(1-5) STAFF

Prerequisites: upper-division standing; a major within MCDB; completion of two prior upper-division courses in MCDB or EEMB; consent of instructor and department.

Students must have a minimum grade-point average of 2.5 in upper-division major courses and are limited to 5 units per quarter and 30 units total in all 197/198/199/199RA courses combined. Maximum units for credit defined on major sheets. See also credit limits with other courses in description of major requirements. Tutorial, 1-5 hours; laboratory, 5-25 hours.

Hours and credit by arrangement with any faculty member.

198. Directed Readings
(1-5) STAFF

Prerequisites: upper-division standing; a major within MCDB; completion of two prior upper-division courses in MCDB or EEMB; consent of instructor and department.

Students must have a minimum grade-point average of 3.0 in upper-division major courses and are limited to 5 units per quarter and 30 units total in all 197/198/199/199RA courses combined. Maximum units for credit in major: 8 for BS; 4 for BA. See also credit limits with other courses in description of major requirements. Tutorial, 1-5 hours.

Individual conferences one hour every two weeks. Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field. (F,W,S)

199. Independent Studies
(1-5) STAFF

Prerequisites: upper-division standing; a major within MCDB; completion of two prior upper-division courses in MCDB or EEMB; consent of instructor and department..

Students must have a minimum grade-point average of 3.0 in upper-division major courses and are limited to 5 units per quarter and 30 units total in all 197/198/199/199RA courses combined. Maximum units for credit in major: 8 for BS; 4 for BA. See also credit limits with other courses in description of major requirements. Tutorial, 1-3 hours; field, 1-5 hours.

Hours and credit by arrangement with any faculty member. Laboratory or field. (F,W,S)

GRADUATE COURSES

203. Cell Biology
(4) CLEGG

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2-2L, or equivalents.

Not open for credit to students who have completed Biology 237. Lecture, 3 hours; discussion, 1 hour.

Introduction to the structure and function of cell organelles: membranes, nucleus, mitochondria, chloroplasts, endoplasmic reticulum, golgi apparatus, lysosomes, microbodies, microtubules, cilia, centrioles, and microfilaments. (W)

208AL. Biochemistry Computer Laboratory
(2) SEARS

Prerequisite: MCDB 108A (may be taken concurrently).

Recommended preparation: Mathematics 3A-B or 34A-B.

Computer laboratory analysis of biochemical structures and the dynamics of their interactions with other molecules. Students will be required to submit a structural analysis paper on a topic of their choice. (F)

212. Molecular Virology
(5) SAMUEL

Prerequisites: MCDB 108A-B-C and 101A-B.

Not open for credit to students who have completed Biology 212. Lecture, 5 hours.

Consideration of selected animal viruses in terms of structure, mechanism of genetic expression, and effects of viral gene expression on cell function, as well as aspects of the virus-host interaction including viral persistence, interference, and interferon. (S)

214. Neurobiology I
(4) FISHER, JOHNSON, VANDENBURG

Prerequisite: MCDB 1A-AL or equivalent.

Not open for credit to students who have completed Biology 208. Lecture, 3 hours; discussion, 1 hour.

Nervous system properties ranging from single cells to whole organisms, using examples from vertebrates/invertebrates studied in terms of morphology, physiology, behavior. (F)

215. Developmental Neurobiology: A Molecular and Cellular Perspective
(4) STAFF

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2-2L; and EEMB 3-3L; and MCDB 101A.

Not open for credit to students who have completed Biology 209.

Recommended preparation: MCDB 112. Lecture, 3 hours; discussion, 1 hour.

The course begins with fertilization and moves through sequential stages in the development of the nervous system, including cell migration and differentiation, axon outgrowth and pathfinding, programmed cell death, synaptogenesis, learning, memory, neurodegenerative conditions and current strategies for neuronal regeneration. (S)

216. Molecular and Cellular Neuroscience
(3) CLEGG, FISHER, SMITH

Prerequisite: graduate standing. Lecture, 2 hours; discussion, 1 hour.

Emphasis on current research investigations into the development, cell biology, and molecular biology of the nervous system. Topics will vary based upon current progress in the field. (S)

218A. Nucleic Acids and Proteins
(5) KOHLSTAEDT, LEW, PERONA, ROTHMAN

Prerequisites: graduate standing in biochemistry-molecular biology, or chemistry.

Same course as BMB 218A. Not open for credit to students who have completed Biology 218A. Lecture, 5 hours.

Properties, structure, and structure function analysis of nucleic acids and proteins; modern methods in nucleic acid research (synthetic and recombinant DNA, in vitro mutagenesis); protein dynamics (folding, transport, covalent, and non-covalent structural adaptations to function). (F)

218B. Molecular and Cellular Biology
(5) LOW, ROTHMAN, SAMUEL, WILSON

Prerequisite: graduate standing.

Same course as BMB 218B. Not open for credit to students who have completed Biology 218B. Lecture, 4 hours; discussion, 1 hour.

The cytoskeleton; chromatin and chromosome organization, structure, and function; mechanisms of gene expression in prokaryotes and eukaryotes and their viruses; membrane structure, organization, and protein trafficking; cell-cell and cell-matrix interactions. (W)

218C. Gene Regulation and Development
(5) STAFF

Prerequisite: MCDB 218B or BMB 218B.

Same course as BMB 218C. Not open for credit to students who have completed Biology 218C. Lecture, 4 hours; Discussion, 1 hour.

Specialized features of plant cells. Regulation of gene expression during development. Models include prokaryotes (bacteria) and eukaryotes (plants, yeast, ciliates, C. Elegans, Drosophila, sea urchins, mouse), with emphasis on systems that undergo cellular differentiation and cellular rearrangement. (S)

218X. Selected Topics in Gene Regulation and Development
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as BMB 218X. Not open for credit to students who have completed Biology 218X. Lecture, 4 hours; discussion 1 hour.

Selected topics in gene regulation and development as appropriate to fulfill the course requirement

of graduate students in biochemistry and molecular biology. (S)

218Y. Selected Topics in Molecular and Cellular Biology
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as BMB 218Y. Not open for credit to students who have completed Biology 218Y. Lecture, 4 hours; discussion 1 hour.

Selected topics in molecular and cellular biology as appropriate to fulfill the course requirement of graduate students in biochemistry and molecular biology and molecular, cellular, and developmental biology. (W)

218Z. Selected Topics in Biochemistry of Nucleic Acids and Proteins
(1-4) STAFF

Prerequisite: consent of graduate advisor.

Same course as BMB 218Z. Not open for credit to students who have completed Biology 218Z. Lecture, 4 hours; discussion, 1 hour.

Selected topics in the biochemistry of nucleic acids and proteins as appropriate to fulfill the course requirement of graduate students in biochemistry and molecular biology. (F)

219. Plant Molecular Biology
(3) CHRISTOFFERSEN, COOPER, FINKELSTEIN

Prerequisites: MCDB 108A-B-C and 101A-B.

Not open for credit to students who have completed Biology 215. Lecture, 3 hours.

The molecular biology of vascular plants. Emphasis on the molecular mechanisms by which external and internal factors control development. Plant-microbe interactions and practical applications of transgenic plants will also be considered. (Not offered 2000-01)

220. Experimental Cytology and Digital Imaging
(4) FISHER

Prerequisite: consent of instructor. Lecture, 2 hours; laboratory, 6 hours.

Introduction to imaging cellular substructure with the light microscope. Students receive theoretical and hands-on experience in obtaining maximum data from biological specimens using optical and digital enhancement techniques. (S)

221. Preparation and Evaluation of Research Proposals
(1) FOLTZ

Prerequisites: MCDB 218A-B or BMB 218A-B. Lecture, 1 hour.

Instruction in preparation, writing, and evaluation of research grant proposals. Students are required to submit a full research proposal (in Federal funding agency format) at the end of the course. (S)

222. Sequence Analysis
(1) POOLE

Prerequisite: consent of instructor. Lecture, 1 hour.

Analysis of DNA and protein sequence data. Topics include protein property prediction, defining sequence similarity, sequence comparison, and sequence database searching. (F)

224. Biological Mass Spectrometry
(2) WAITE

Prerequisite: A graduate level biochemistry course such as MCDB 218A or 245. Lecture, 1 hour; lab, 2 hours.

Lecture and laboratory instruction on the principles of laser desorption mass spectrometry as applied to biological research.

226A. Basic Pharmacology
(4) STAFF

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 219A. Lecture, 3 hours; discussion, 1 hour.

History and scope of pharmacology as a basic science; principles of drug action and relationship of pharmacology to physiology, chemistry, biochemistry emphasized. (F)

226AL. Pharmacology Lab I
(4) STAFF

Prerequisite: concurrent enrollment in MCDB 226A.

Not open for credit to students who have completed Biology 219AL. Discussion, 1 hour; laboratory, 8 hours.

Analysis of drug sites and mechanisms of action using isolated tissues, organs, and intact animal preparations. (F)

226B. Basic Pharmacology
(4) VANDENBURG

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 219B. Lecture, 3 hours; discussion, 1 hour.

Receptor signalling mechanisms; pharmacology of neurotransmitter and hormone receptors; molecular and cellular mechanisms of drug-receptor interactions. (W)

226BL. Pharmacology Laboratory II
(4) VANDENBURG

Prerequisites: concurrent enrollment in MCDB 226B.

Not open for credit to students who have completed Biology 219BL. Discussion, 1 hour; laboratory, 9 hours.

An introduction to molecular and biochemical techniques in pharmacology; drug-receptor binding; receptor isolation; pharmacokinetics; techniques to evaluate potency, concentration and effects of hormones and their receptors. (W)

226C. Basic Pharmacology: Principles and Chemotherapy
(4) WILSON

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 219C. Lecture, 3 hours; tutorial, 1 hour.

Fundamental principles of pharmacology, drug-receptor theory, biochemical mechanisms of action of drugs. (S)

227. Cellular and Developmental Biology of Eukaryotic Microbes (Slime Molds and Fungi)
(3) ROSS

Prerequisites: MCDB 101A-B; and, MCDB 108A-B-C or 110; and consent of instructor.

Not open for credit to students who have completed Biology 227. Lecture, 2 hours; discussion, 1 hour.

Current concepts of the molecular basis of cell differentiation and development in slime molds and fungi. Emphasis on aspects of cell interactions unique to fungi and the molecular basis of the role of these organisms in industrial and medical areas. A research paper, written and oral, based on current literature is required. (Not offered 2000-01)

231. General Microbiology
(4) COOPER, ROSS

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2-2L; and, Chemistry 107A-B and 108, or 130A-B-C.

Not open for credit to students who have completed Biology 207. Lecture, 3 hours; discussion, 1 hour.

Introduction to the biological properties of microorganisms; historical foundations of the field of microbiology; a study of the major groups of microorganisms, their structure, physiology, cultivation, and pathogenicity. (F)

231L. General Microbiology Laboratory
(2) COOPER

Prerequisite: concurrent enrollment in MCDB 231. Laboratory, 6 hours.

Laboratory experiments on the isolation, cultivation, and analysis of diverse microorganisms. (F)

232. Bacterial Pathogenesis
(3) MAHAN

Prerequisite: MCDB 101A-B.

Not open for credit to students who have completed Biology 228.

Recommended preparation: MCDB 231. Lecture, 3 hours.

The mechanisms by which bacterial pathogens cause disease. Investigation of the bacterial gene products produced during infection to understand the metabolic, physiological, and genetic factors that contribute to the virulence of bacterial pathogens. (W)

232L. Bacterial Pathogenesis Laboratory
(3) MAHAN

Prerequisite: MCDB 232 (may be taken concurrently).

Not open for credit to students who have completed Biology 228L. Laboratory, 6 hours; discussion, 1 hour.

The latest molecular, biochemical, and genetic techniques available for the identification of microbial gene products that contribute to infection. Study of the regulatory parameters that govern their expression. (W)

233. Molecular and Cellular Immunobiology
(3) SEARS

Prerequisites: MCDB 101A-B or 108A-B-C.

Not open for credit to students who have completed Biology 223. Lecture, 3 hours.

Introduction to, and evaluation of, the current concepts of immunology. Emphasis on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex in regulating immune responsiveness. (W)

237. Biology of Fungi
(4) ROSS

Prerequisites: MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2-2L; and EEMB 3-3L; and MCDB 101A (may be taken concurrently).

Not open for credit to students who have completed Biology 273. Lecture 3 hours; laboratory, 3 hours.

Morphology, development, and genetic systems of fungi and allied protists. The significance of the uniqueness of fungal sexual and genetic mechanisms and the interactions between fungi and other organisms will be stressed, with experimental, biotechnology, and medical aspects emphasized. (Not offered 2000-01)

245. Macromolecules From Marine Organisms
(4) WAITE

Prerequisite: MCDB 108A or 218A. Lecture, 3 hours; discussion, 1 hour.

Structure/function relationships in interesting macromolecules isolated from marine organisms. Focus will be on well-characterized pathways from horseshoe crabs, abalones, mussels, and fish as well as others. (F)

249. Mariculture: Research Frontiers in Farming the Sea
(4) MORSE, CHAPMAN, COLLINS

Prerequisite: graduate standing.

Same course as EEMB 249. Not open for credit to students who have completed Biology 249. Lecture, 3 hours; discussion, 1 hour.

Recent progress and new directions in research increasing production of valuable marine animals, plants and microorganisms. Control of reproduction, development, growth and disease in marine species; problems encountered in commercializing production; regional and biological solutions; the role of modern biotechnology. (S)

260. Research Seminar in Biochemistry-Molecular Biology
(1) STAFF

Prerequisite: graduate standing.

Same course as BMB 260. Not open for credit to students who have completed Biology 260. Seminar, 1 hour.

Seminars on research in progress presented by faculty of the Department of Chemistry and Department of Molecular, Cellular and Developmental Biology. (F,W,S)

261. Literature in Immunology
(1) SEARS

Prerequisite: consent of instructor.

Not open for credit to students who have

completed Biology 261. Seminar, 1 hour.

Critical reading and presentation of recent literature in immunology. (Not offered 2000-01)

262. Research Progress in Molecular, Cellular and Developmental Biology

(1) STAFF

Same course as BMB 262. Not open for credit to students who have completed Biology 262. Seminar, 1 hour.

Research presentations by postdoctoral fellows and advanced Ph.D. students of research progress in the department. (F,W,S)

263. Progress in Biochemistry and Molecular Biology

(1) STAFF

Same course as BMB 263. Not open for credit to students who have completed Biology 263. Seminar, 1 hour.

Research seminars presented by invited speakers on current research topics. (F,W,S)

264. Literature in Nucleic Acids and Chromosomes

(1) CARBON, CLARKE

Prerequisite: graduate standing.

Not open for credit to students who have completed Biology 264. Seminar, 1 hour.

Critical reading and presentation of the recent literature on nucleic acids and chromosomes by staff, postdoctoral fellows, and graduate students. (F,W,S)

265. Literature in Virology

(1) SAMUEL

Prerequisites: graduate standing; consent of instructor.

Not open for credit to students who have completed Biology 265. Seminar, 1 hour.

Critical reading and presentation of the recent literature on animal viruses and host cells by graduate students, postdoctoral fellows, and staff. (F,W,S)

266. Literature in Neurobiology

(1) FISHER, CLEGG, VANDENBERG

Prerequisite: consent of instructor.

Not open for credit to students who have completed Biology 266. Seminar, 1 hour.

Critical reading and presentation of the literature in modern neurobiology. (F,W)

267. Advanced Topics in Immunobiology

(2) SEARS

Prerequisite: MCDB 233 (may be taken concurrently).

Not open for credit to students who have completed Biology 224. Lecture, 2 hours.

Contemporary developments and controversies regarding the biology of the immune system. (Not offered 2000-01)

268. Literature in Plant Molecular Biology

(1) FINKELSTEIN, CHRISTOFFERSEN

Prerequisite: graduate standing.

Not open for credit to students who have completed Biology 268. Seminar, 1 hour.

Critical reading and presentation of the current literature in higher plant molecular biology, cell biology, and development. (F,W,S)

269. Literature in Pharmacology

(1) JACOBS, WILSON

Prerequisite: graduate standing in biological sciences.

Same course as EEMB 269. Not open for credit to students who have completed Biology 269. Seminar, 1 hour.

Critical reading and presentation of current literature in topics on pharmacology. (F,W,S)

290AA-ZZ. Group Studies

(2) STAFF

Prerequisite: consent of instructor.

Presentation and discussion of current research, to be selected from the following list.

A. Research in Molecular Marine Biology: Morse
B. Research in Biomineralization: Morse
BG. Bacterial Genetics: Low
C. Studies in Regulation of Cell Proliferation: Ballester
CC. Centromeres and Chromosomes–Models and Analysis: Carbon
CE. C. Elegans Development: Rothman
CS. Advanced Topics in Chromosome Segregation: Clarke
DN. Developmental Neurobiology: Clegg
LW. Microtubule Dynamics and Functions: Wilson
MM. Bacterial Pathogenesis: Mahan
MS. Biomass Spectrometry: Waite
PM. Molecular Plant-Microbe Interactions: Cooper
RF. Plant Developmental Genetics: Finkelstein
S. Molecular Virology and Interferon Action: Samuel
SK. Research in Retinal Cell Biology: Fisher
V. Current Research on Cell and Developmental Biology of Fungi: Ross
VA. Molecular Neurobiology–Ion Channels: Vandenberg

292. Advanced Special Topics in Biological Sciences

(1-4) STAFF

Prerequisites: graduate standing; consent of instructor.

May be repeated for credit in combination with Biology 292. Lecture, 1-4 hours.

Special topics of current importance in biological sciences. Course content will vary. Information on course content may be obtained in the department office.

500. Teaching Assistant Orientation

(1) STAFF

Required of all teaching assistants.

No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 500. Workshop, 1 hour.

General orientation regarding the University of California and the Santa Barbara campus; various pertinent regulations, officials and their functions, staff and functions; services available to teaching assistants and to students. Prospective teaching assistants are encouraged to take this course during the fall quarter prior to their employment. (F)

501. Practicum in Instruction

(1-4) STAFF

Prerequisite: concurrent teaching assistant employment.

No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 501. Workshop, 3-12 hours.

Practical experience in teaching within specified areas of biology. Students will have responsibility for one or more laboratory and/or discussion sections. Staff will periodically observe teaching assistants in actual teaching situations. Evaluation forms will be completed by members of the class sections. (F,W,S)

502. Techniques of Teaching and Laboratory Class Supervision

(1-2) STAFF

Prerequisite: concurrent teaching assistant employment. Required of all teaching assistants.

No unit credit allowed toward advanced degree. May be repeated for credit in combination with Biology 502. Discussion, 1 hour.

Weekly discussion and readings on techniques of teaching including lecturing, leading discussions, writing and grading exams, student-teacher interactions, classroom dynamics, and teaching philosophy. (F,W)

503. Research Practicum in Biology

(1-2) STAFF

May be repeated for credit in combination with Biology 503. Tutorial, 1-2 hours.

Basic procedures and methods of research in a specified area as determined by consultation between the supervising faculty member and the research assistant. Includes weekly meetings and consultations, and formal evaluations. (F,W,S)

595AA-ZZ. Group Studies

(2) STAFF

Prerequisite: consent of instructor.

May be repeated for credit in combination with Biology 595AA-ZZ and EEMB 595AA-ZZ to a maximum of 8 units. Individual letter designations may be repeated for credit to a maximum of 4 units. Seminar, 2 hours.

A critical review of research in selected fields of biology. Subject matter for these seminars will be selected from the following list:

A-B. Biochemistry-Molecular Biology: Staff
BC. Biochemistry/Molecular Biology: Cooper
BG. Bacterial Genetics: Low
DM. Molecular Marine Biology and Marine Biotechnology: Morse
DS. Molecular and Cellular Immunology: Sears
DV. Developmental Biology: Smith
EO. Genetics: Orias
F. General Physiology: Staff
G. Virology: Samuel
MM. Contemporary Topics in Biochemistry and Molecular Biology: Sears
MP. Microbial Pathogenesis: Mahan
NN. Literature in Eukaryotic Molecular Genetics: Orias
V. Mycology: Ross
X. Cell Biology: Foltz

596. Directed Reading and Research

(2-12) STAFF

Prerequisite: consent of instructor.

Hours and credit by arrangement with faculty.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) STAFF

Prerequisite: consent of instructor.

May be repeated for credit in combination with Biology 597. No unit credit allowed toward advanced degree. Students are limited to 24 units per examination, and 12 units per quarter.

Individual study for M.A. comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation

(1-12) STAFF

Prerequisites: M.A. (thesis) candidate and consent of committee chair.

May be repeated for credit in combination with Biology 598 to a maximum of 12 units. No unit credit allowed toward advanced degree.

For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Preparation

(1-12) STAFF

Prerequisites: Ph.D. candidate and consent of instructor.

May be repeated for credit in combination with Biology 599 to a maximum of 12 units.

For writing of the dissertation.

Music

Department of Music,
Division of Humanities and Fine Arts,
Music 1315;
Telephone (805) 893-3261
E-mail address:
guerr2ro@humanitas.ucsb.edu
Web site: www.music.ucsb.edu

Department Chair: Lee Rothfarb

Faculty

Nico Abondolo, D.M.A., Juilliard School, Lecturer (double bass)

Charles Asche, D.M.A., University of Texas at Austin, Lecturer (piano, chamber music)

Paul Bambach, M.M., University of Cincinnati, Lecturer (clarinet, wind ensemble)

Michael Beckerman, Ph.D., Columbia University, Professor (19th-century music, Eastern European music)

Paul Berkowitz, Diploma, Curtis Institute of Music, Philadelphia, Professor (piano, chamber music)

William Booth, M.M., Catholic University, Lecturer (trombone, tuba, euphonium)

Cornelia Fales, Ph.D., Indiana University, Assistant Professor (ethnomusicology)

Joel S. Feigin, D.M.A., Juilliard School of Music, Associate Professor (composition)

Jill Felber, M.M., Bowling Green University, Professor (flute)

Robert N. Freeman, Ph.D., UC Los Angeles, Associate Professor (classical music)

Michel Marc Gervais, B.M., University of Alberta, Associate Professor (choral conducting, choir)

Steven Gross, D.M.A., University of Cincinnati, Associate Professor (french horn)

Jeremy Haladyna, Ph.D., UC Santa Barbara, Lecturer (orchestration, ensemble for contemporary music)

Patricia Hall, Ph.D., Yale University, Associate Professor (theory, 20th-century music)

Dolores M. Hsu, Ph.D., University of Southern California, Professor (19th-century music, music criticism, ethnomusicology)

Michael Ingham, M.A., Denver University, Professor (voice)

William Kraft, M.A., Columbia University, Corwin Professor of Music Composition (composition)

JoAnn Kuchera-Morin, Ph.D., University of Rochester, Eastman School of Music, Professor (electronic and computer-generated music)

Scott Marcus, Ph.D., UC Los Angeles, Associate Professor (ethnomusicology)

Elizabeth Mosher, M.M., University of Southern California, Professor (voice)

Betty Oberacker, D.M.A., Ohio State University, Professor (piano, chamber music)

Heiichiro Ohyama, A.G.S.M., Guildhall School of Music, London, Professor (conducting, viola, violin, chamber music)

Alejandro Planchart, Ph.D., Harvard University, Professor (medieval and renaissance music, Collegium Musicum)

William Prizer, Ph.D., University of North Carolina, Professor (renaissance and early baroque music, Collegium Musicum)

Lee Rothfarb, Ph.D., Yale University, Associate Professor (theory)

Geoffrey B. Rutkowski, M.M., University of Southern California, Professor (cello, chamber music)

Pieter van den Toorn, Ph.D., UC Berkeley, Professor (theory, 20th-century music)

Emeriti Faculty

Emma Lou Diemer, Ph.D., Eastman School of Music, Professor Emerita (composition)

John Gillespie, Ph.D., University of Southern California, Professor Emeritus (American music)

Elizabeth Mannion, B.A., University of Washington, Professor Emerita (voice)

Clayton Wilson, M.M., Northwestern University, Professor Emeritus (oboe)

Carl Zytowski, M.A., University of Washington, Professor Emeritus (choir)

Affiliated Faculty

Dwight F. Reynolds, Ph.D. (Religious Studies)

The Department of Music curriculum includes undergraduate courses which lead to completion of either of two degrees: (1) the bachelor of arts in music, or (2) the bachelor of music, a professional degree in performance or composition. The undergraduate major programs are designed to serve as background for professional careers in music, as preparation for graduate studies, or as an area of concentration for a liberal arts education.

The graduate program includes courses leading to the master of arts degree and the doctor of philosophy degree in composition, ethnomusicology, musicology, and theory. The master of music degree and the doctor of musical arts degree in musical performance are designed to provide graduate and professional training in the intellectual, practical, and professional skills increasingly demanded of performers in this century.

Undergraduate Program

Performance ensembles are available for all qualified students, and a wide range of undergraduate courses is offered for nonmajors. Information regarding various cash prizes and awards that are offered each year to outstanding students enrolled in composition, ethnomusicology, musicology, performance or theory is available at the Department of Music office.

After completing specific prerequisites, students with a bachelor's degree in music are eligible to pursue a California Teaching Credential. Interested students should discuss their plans as soon as possible with the credential advisor in the Graduate School of Education.

All new music majors are required to take placement tests in musicianship and music theory, and placement auditions in class piano (except for students who have had no background whatsoever in piano; they should enroll in Music 31A). These are given only during pre-instructional days at the beginning of each quarter, and should be taken prior to enrollment in music classes. All students wishing to take performance classes must pass an audition for the appropriate class. Auditions for performance classes should be taken preferably at the entrance auditions before admission (particularly if a bachelor of music performance concentration is being considered—see below), or during pre-instructional days at the beginning of each quarter. An initial consultation with the departmental undergraduate staff advisor is mandatory before embarking on any of the following courses of study. The department also requires that music majors meet at least once each year with their major faculty advisor to help in the planning of course selection and to assure that adequate progress is being made toward the degree.

The departmental Recital Attendance requirement must be met each quarter a student is enrolled, up to normative time (twelve quarters).

All auditions (including recital auditions), composition portfolios and papers required for both music major degrees and all emphases must be reviewed by the faculty area committee appropriate to the B.M. emphasis or B.A. project, and approved by at least two members of the committee, as signed on forms provided by the music undergraduate advisor.

A grade of at least a C- is required from placement point onwards in all courses in the Music 4A-F, 5A-F, and 31A-F sequences in order to proceed to the next course in each sequence and to complete each sequence. (Course F must also be completed with a grade of C- or better). All students must achieve a grade-point average of at least 2.0 in all courses for the overall major program, both lower- and upper-division, and in all courses required for the upper-division major program. Students must also achieve an overall grade-point average of at least 2.0 in order to qualify for graduation. Students transferring from other institutions must complete at least three quarters within the department.

Honors Program in Music (Distinction in the Major)

The senior honors program in the Department of Music encourages seniors to excel in music and to undertake projects beyond the normal requirements, and provides a means of recognizing outstanding achievement. Only music majors (B.A. or B.M.) with a cumulative grade-point average of at least 3.5 at the end of the junior year or at the time of applying for selection during senior year and who are recommended by a faculty member may be selected for the departmental honors program in music. Students selected must enroll for unit credit in Music 196 (Honors Project) and in either Music 192 (B.A. Senior Project), Music 197 (B.M. Senior Recital), or Music 197B (B.M. Senior Composition Portfolio and Recital), as applicable. "Distinction in the Major" will be awarded if a final cumulative grade-point average of at least 3.5 is maintained and both a grade of at least A- in Music 196 and a grade of at least A- in Music 192, 197, or 197B are achieved, as assessed by both the instructor(s) of the two courses and by one other faculty member.

Bachelor of Arts—Music

Students pursuing the bachelor of arts in music must meet the General Education requirements for the bachelor of arts degree set by the College of Letters and Science. The following courses may be taken for only 1-unit credit in the major per quarter by B.A. music students: Music 25, 26A-E, 27A-D, 28A-E, 29, 33, 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133. The upper-division courses in this list may only be taken after passing the appropriate sophomore audition or composition portfolio. Any such courses improperly enrolled in may not be applied to the upper-division major. A grade of at least a C- is required from placement point onwards in all courses in the Music 4A-F, 5A-F, and 31A-F sequences in order to proceed to the next course in each sequence and to complete each sequence. (Course F must also be completed with a grade of C- or better).

Preparation for the major: Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); piano proficiency required either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); completion of sixth quarter or its equivalent in (level 6 proficiency) French, German, or Italian or completion of third quarter or its equivalent (level 3 proficiency) in two of the following languages: French, German, Italian (the attainment of level 6 proficiency in one language is strongly recommended, particularly for students intending to pursue graduate studies in musicology or music theory); six courses (at 1 unit per quarter) from 20-33 (6 units); six courses from Music A34-A70; successful completion of the sophomore project (audition, composition, or paper).

Upper-division major. Forty-eight upper-division units required: Music 102 or 103; 112A-B-C-D-E-F; 160A-B-C; one course from 175A-J or 176; 3 units from 160D-187; three courses from A134-A170; 9 units of upper-division music electives (Music 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133 may be taken for only 1-unit credit in the major, and only if the appropriate sophomore audition or composition portfolio has been passed); successful completion of the senior project (audition, composition, or paper). All students enrolled in applied instruction in an orchestral instrument are required to elect orchestra (A42/A142) if their participation is needed, until ensemble requirements are fulfilled. All students enrolled in applied vocal instruction are required to elect a choir (A36/A136, A37/A137, or A48/A148) if their participation is needed, until ensemble requirements are fulfilled.

Ethnomusicology Emphasis

Preparation for the major: Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); piano proficiency, demonstrated either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); completion of sixth quarter or its equivalent (level 6 proficiency) in French, German, or Italian or another language by petition or completion of third quarter or its equivalent (level 3 proficiency) in two of French, German, Italian, or other languages by petition (the attainment of level 6 proficiency in one language is strongly recommended, particularly for students intending to pursue graduate studies in ethnomusicology); six courses (at 1 unit per quarter) from Music 20-33 (6 units); six courses from A34-A70; successful completion of the sophomore project.

Upper-division major. Forty-eight upper-division units required: Music 169; three courses from 112A-B-C-D-E-F; 160A-B; three courses from 175A-K; 176; three courses from 104, 105, 160D-E, 168A-G, 175A-K (in addition to those applied above); three courses from A134-A170; 6 units of upper-division music electives (Music 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133 may be taken for only 1-unit credit in the major, and only if the appropriate sophomore audition or composition portfolio has been passed); successful completion of the senior project. All students enrolled in applied instruction in an orchestral instrument are required to elect orchestra (A42/A142) if their participation is needed, until ensemble requirements are fulfilled. All students enrolled in applied vocal instruction are required to elect a choir (A36/A136, A37/A137, A48/A148, or A70/A170) if their participation is needed, until ensemble requirements are fulfilled.

Bachelor of Music

The bachelor of music degree is open by audition to specially qualified students in performance and composition. Students seeking admission to a bachelor of music performance emphasis are required to pass an entrance audition in their desired emphasis (instrument or voice) in order to determine their eligibility. Entrance scholarships may be awarded to selected students demonstrating outstanding talent and proficiency at the entrance auditions. Information and dates of the entrance auditions may be obtained from the music program advisor in the Department of Music office. Students must meet the General Education Program requirements for the bachelor of music degree set by the College of Letters and Science. Completion of one (or more) of the following emphases will be noted on the student's official transcript, but will not appear on the diploma. For all emphases except guitar and voice, knowledge of German, French, or Italian to level three is highly recommended by the end of the sophomore year. Knowledge of Spanish to level three is highly recommended for the guitar emphasis. Knowledge of Italian to level three is required for the voice emphasis, along with knowledge of French or German to level three. Junior and senior recitals may not be given until the appropriate recital audition (or composition portfolio) has been reviewed by the faculty area committee appropriate to the emphasis and approved by at least two members of the committee, as signed on forms provided by the music undergraduate advisor. Except where specified in the description of requirements for individual B.M. emphases, the following courses may be taken for only 1 unit per quarter: Music 25, 26A-E, 27A-D, 28A-E, 29, 33, 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133.

The upper-division courses in this list, whether applied to the B.M. emphasis or otherwise, may only be taken after passing the appropriate sophomore audition or composition portfolio. Any such courses improperly enrolled in may not be applied to the upper-division major. A grade of at least a C- is required from placement point onwards in all courses in the Music 4A-F, 5A-F, and 31A-F sequences in order to proceed to the next course in each sequence and to complete each sequence. (Course F must also be completed with a grade of C- or better).

Accompanying Emphasis

Preparation for the major. Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); six quarters (at 3 units per quarter) of 33 (18 units); three courses of A41; 35A-B-C; three courses from A34-A70; 17; successful completion of the freshman and sophomore auditions.

Upper-division major. Eighty-one upper-division units required: Music 112A-B-C-D-E-F; 160A-B; six quarters (at 4 units per quarter) of 133 (24 units); 135A-B-C-D-E-F; 3 units from 160C-D, 162-187 (will normally be met by the election of 178A or 178B); 120A or 120B; 161; three quarters of A144; two quarters of 150; three courses from A134-A170; successful completion of junior and senior recitals.

Bassoon, Cello, Clarinet, Double Bass, Flute, French Horn, Oboe, Percussion, Trombone, Trumpet, Tuba, Viola, and Violin Emphases

Preparation for the major. Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); piano proficiency, demonstrated either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); six quarters (at 3 units per quarter) of one of the following courses, as appropriate to the emphasis: Bassoon Emphasis: 27A; Cello Emphasis: 26B; Clarinet Emphasis: 27B; Double Bass Emphasis: 26A; Flute Emphasis: 27C; French Horn Emphasis: 28A; Oboe Emphasis: 27D; Percussion Emphasis: 29; Trombone Emphasis: 28B; Trumpet Emphasis: 28C; Tuba Emphasis: 28D; Viola Emphasis: 26D; Violin Emphasis: 26E (18 units); three courses from A40, A43, A44, A45, A46 and/or A49; six courses from A34 or A42 (cello, viola, and violin emphases: A42 only); 17; successful completion of the freshman and sophomore auditions.

Upper-division major. Seventy-one to seventy-seven upper-division units required: Music 112A-B-C-D-E-F; 160A-B; 120A; six quarters (at 4 units per quarter) of one of the following courses, as appropriate to the emphasis: Bassoon Emphasis: 127A; Cello Emphasis: 126B; Clarinet Emphasis: 127B; Double Bass Emphasis: 126A; Flute Emphasis: 127C; French Horn Emphasis: 128A; Oboe Emphasis: 127D; Percussion Emphasis: 129; Trombone Emphasis: 128B; Trumpet Emphasis: 128C; Tuba Emphasis: 128D; Viola Emphasis 126D; Violin

Emphasis: 126E (24 units); 3 units from 160C-187 (will normally be met by the election of 178A or 178B); six courses from A140, A143, A144, A145, A146, and/or A149; six courses from A134 or A142 (cello, viola, and violin emphases: A142 only); six units of upper-division electives; successful completion of the junior and senior recitals. All students enrolled in applied instruction in an orchestral instrument are required to elect orchestra (A42/A142) if their participation is needed, until ensemble requirements are fulfilled.

Composition Emphasis

Preparation for the major: Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F; piano proficiency, demonstrated either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); three quarters of 8; three quarters of 88; 17; six courses (6 units) from 21, 25, 26A-E, 27A-D, 28A-E, 29, 32A-F, 33 (or 22 by petition and audition); six courses from A34-A70; successful completion of freshman and sophomore composition portfolios.

Upper-division major. Seventy-four upper-division units required: Music 112A-B-C-D-E-F; 120A or B; six quarters (at 3 units per quarter) of 108 (18 units); 101A-B-C; 102; 103; 106A-B-C; 160A-B; 3 units from 160C-187; 109IA-B or 109LA-B-C or 109IA and 109LA; three courses from A134-A170; successful completion of the junior composition portfolio, and the senior composition portfolio and recital. All students enrolled in applied instruction in an orchestral instrument are required to elect orchestra (A42/A142) if their participation is needed, until ensemble requirements are fulfilled. All students enrolled in applied vocal instruction are required to elect a choir (A36/A136, A37/A137, or A48/A148) if their participation is needed, until ensemble requirements are fulfilled.

Guitar Emphasis

Preparation for the major: Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); piano proficiency, demonstrated either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); six quarters (at 3 units per quarter) of 26C (18 units); three quarters of A39; six courses from A34-A70 (except A39); 17; successful completion of the freshman and sophomore auditions.

Upper-division major. Seventy-one upper-division units required: Music 112A-B-C-D-E-F; 160A-B; six quarters (at 4 units per quarter) of 126C (24 units); three units from 160C-187; three quarters of A139; three courses from A134-A170 (except A139); two courses of A144; 155; 120A or B; 178A or 178B; three units of upper-division electives; successful completion of the junior and senior recitals.

Piano Emphasis

Preparation for the major. Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); six quarters (at 3 units per quarter) of 33 (18 units); three courses of A41; 35A-B-C; three courses from A34-A70; 17; successful completion of the freshman and sophomore auditions.

Upper-division major. Seventy-four upper-division units required: Music 112A-B-C-D-E-F; 160A-B; six quarters (at 4 units per quarter) of 133 (24 units); 3 units from 160C-D, 162-187 (will normally be met by the election of 178A or 178B); 120A or B; 161; three courses from 135A-B-C and/or A144; three quarters of A144 (not applied above); three courses from A134-A170; upper-division music electives (3 units); successful completion of junior and senior recitals.

Voice Emphasis

Preparation for the major. Music 4A-B-C-D-E-F (placement determined by exam); 5A-B-C-D-E-F (placement determined by exam); piano proficiency, demonstrated either by successful completion of a piano proficiency audition or by completing Music 31 (placement determined by audition); Italian 1-2-3; German 1-2-3 or French 1-2-3; six quarters (at 3 units per quarter) of 25 (18 units); six courses from A36, A37, and/or A48; three quarters at A38 or A38P; 17; successful completion of the freshman and sophomore auditions.

Upper-division major. Seventy-three upper-division units required: Music 112A-B-C-D-E-F; 160A-B; 120B; six quarters (at 4 units per quarter) of 125 (24 units); 3 units from 160C-187 (will normally be met by the election of 178A or 178B); six courses from A136, A137, or A148; three quarters of A138 or A138P; three quarters of 150; 151; 158A-B-C-D; successful completion of junior and senior recitals. All students enrolled in applied vocal instruction are required to elect a choir (A36/A136, A37/A137, or A48/A148) if their participation is required, until ensemble requirements are fulfilled.

Minor—Music

Students majoring in other disciplines are able to pursue an interest in music at a less intensive level than the major by completing a minor in music. The wide diversity of courses offered by the Department of Music is well-suited to cater to varied interests such as vocal or instrumental music study, composition, music history, music theory, and ethnomusicology (non-Western music). The minor consists of any 18 upper-division units in music, of which no more than 6 units may be performance courses (120-133) and no more than 6 units may be ensemble courses (A134-A170). The lower-division preparation prerequisites are Music 11 (4 units) which may be waived by placement examination, and either 15, 17, or 4A-B-C/5A-B-C (4-18 units); but most upper-division courses, with the exception of ethnomusicology courses and a few others, have specific prerequisites which must be met. With the appropriate prerequisites or consent of instructor, all music courses, both those designated for the major and for the nonmajor, are open to students in the minor.

The following courses may be taken for only 1-unit credit per quarter applied to the minor, and only after passing the appropriate audition or composition evaluation: Music 25, 26A-E, 27A-D, 28A-E, 29, 33, 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133.

All upper-division courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in the Department of Music at UCSB and those offered by other departments and applied to the minor.

Preparation for the minor. Four to 22 units: Music 11 (which may be waived by placement examination only); and either 15, 17, or 4A-B-C/5A-B-C. Variable units: All prerequisites for specific upper-division music courses, as specified in the *General Catalog*, or as waived by consent of instructor.

Please note:

a. Upper-division music history courses require either Music 15 or 5C (and/or 112), or consent of instructor.
b. Upper-division ethnomusicology courses: no prerequisite (Music 17 recommended).
c. Upper-division music theory courses require Music 5E or 5F or consent of instructor.
d. Upper-division composition courses require Music 5E or 5F or consent of instructor.
e. All upper-division performance courses except Music 122 require the passing of the B.A. sophomore audition (each performance area has appropriate guidelines for this audition).
f. Upper-division ensembles (music performance laboratories) require only consent of instructor.

Upper-division minor. Eighteen upper-division units in music. No more than 6 units of performance courses 120-133 may be applied to the minor. No more than 6 units of ensemble courses A134-A170 may be applied to the minor.

The following courses may be taken for only 1-unit credit per quarter applied to the minor, and only after passing the appropriate audition or composition evaluation: Music 25, 26A-E, 27A-D, 28A-E, 29, 33, 108, 125, 126A-E, 127A-D, 128A-E, 129, and 133.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must fulfill the university degree requirements found in the chapter "Graduate Education at UCSB." Graduate students in music are required to take at least 12 units per quarter. A minimum residency of six quarters, including composition, dissertation, or thesis, is mandatory. Units of Music 501, 502, 597, 598, and 599 do not count toward fulfillment of university requirements for the M.A., M.M., Ph.D., or D.M.A. degrees.

In addition to the requisite coursework, all sections of the placement guidance exams, taken upon entrance, must be passed or satisfied by taking approved coursework before advancement to candidacy. Demonstrated reading knowledge of the designated foreign language(s) is required by examination(s). The department requires that all graduate students

meet each quarter, prior to final registration, with the designated faculty advisor in their area, and at the beginning of their last year of coursework with the department's graduate advisor.

The application deadline for financial support is December 15 for fall quarter admission. May 1 is the deadline for fall quarter admission for students not seeking financial support. Consult the department or graduate application for details.

Master of Arts—Music

Admission

Applicants will normally be expected to have a bachelor of arts degree in music from UCSB or a degree based on equivalent training. In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB."

Degree Requirements—Composition Emphasis

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102); 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B); Orchestration (106, 107). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French, German, or Italian by the end of their first year of residency.

Seventy-two graduate units are required: All students must take Music 200A, 207A, six quarters of 208, 211A; either (a) two courses from 209IA-IB-IC or (b) one course from 209IA-IB-IC and two courses from 209LA-LB-LC; one course from 261, 263-268, 279, 282-284, 287, 291-292; three courses from A232-A270 (including A240); 10 units of electives selected with the guidance of a faculty advisor.

It is recommended that students take an ethnomusicology course as an elective. Students must also complete one of the following two groups of courses:

Group A: 211A; two courses from 250A-B, 252A-B, and 212A-B.

Group B: 212A; two courses from 250A-B, 252A-B, and 211A-B.

Students must also submit an original composition of substantial length. Additionally, they must present a concert of their own compositions.

Degree Requirements—Ethnomusicology Emphasis

Students must pass sections one through four of the ethnomusicology placement guidance examinations or successfully complete, by the end of their first year of residency, equivalent coursework specified by the ethnomusicology committee. Students must demonstrate reading knowledge of either one European or one field language by the end of their first year of residency.

Seventy-two graduate units are required: Music 200A, 200C, 224, 225, 276; one course from 262A-G; six courses of 288; two courses from 293A-K; 8 units of music or ethnomusicology elective; six courses from A232-A270; 8 units of non-music electives; thesis.

Degree Requirements—Musicology Emphasis

M.A. students will follow one of two plans: Plan 1 (thesis) or Plan 2 (comprehensive examinations). The former requires two years of coursework and the thesis. The latter requires three years of coursework (see below for required courses) and a written comprehensive examination. Upon satisfactory completion of this examination, the student will be awarded an M.A. degree and proceed to the oral qualifying examination for the Ph.D. Students continuing for the Ph.D. will normally follow Plan 2. Terminal M.A. students will follow Plan 1. All students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279); Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French, German, or Italian by the end of their first year of residency.

Plan 1 (thesis) requires the following courses: Music 200A and B; one course from 201A or 201B or 201C; six courses of 203MT; three courses from 261A or 261B, 263A or 263B, 265A or 265B, 266A or 266B, 268A or 268B, 269A or 269B; six courses from A232-A270; 36 additional units selected with guidance of faculty advisor; thesis.

Plan 2 (comprehensive examination) requires the following courses: Music 200A and 200B; two courses from 201A, 201B and/or 201C (student must take all three if specializing in music prior to 1600); 202A and 202B; nine courses of 203MT; one course from each of the following series: 261A-B, 263A-B, 265A-B, 266A-B, 268A-B, 269A-B; two courses from A232-A270; 8 units in approved field(s) outside of music selected with guidance of faculty advisor; 36 additional units selected with guidance of faculty advisor; four days of comprehensive exams.

Degree Requirements—Theory Emphasis

Students must pass the placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French or German by the end of their second year of residency.

Seventy-two graduate units are required: Music 200A and 200D; 250A or 250B; 251A or 251B; 252A and 252B; three courses from A232-A270; six courses of 203MT; 36 additional units selected with guidance of faculty advisor; thesis.

Master of Music

The master of music degree provides preparation for professional performers in the areas offered. The degree will be awarded to candidates who demonstrate technical proficiency and advanced competence as performers, a substantial knowledge of the solo and chamber music literature in the field of their specialization, and a ready command of those aspects of music theory and music history that support and illuminate informed performance.

Admission

Applicants must hold a bachelor of music or a bachelor of arts in music performance. An audition is required. Applicants will provide a repertory list and programs of concerts performed. In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB."

Degree Requirements—Conducting Emphasis

M.M. students in conducting will follow one of two plans: Plan 1 (major performance) or Plan 2 (comprehensive examinations). The former requires two years of coursework and the major performance. The latter requires three years of courses, a successful D.M.A. audition, and a written comprehensive examination. Upon satisfactory completion of this examination, the student will be awarded an M.M. degree and proceed to the oral qualifying examination for the D.M.A. Students continuing for the D.M.A. in emphases in which this degree is offered will normally follow Plan 2. Terminal M.M. students will follow Plan 1.

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French or German or Italian by the end of their first year of residency (M.M., choral conducting requires all three languages before graduation. Orchestral conducting requires two languages before graduation.) Choral conducting students must demonstrate proficiency in piano and voice; orchestral conducting students must demonstrate proficiency in piano, or proficiency

in an orchestral instrument plus basic proficiency in piano.

M.M. concerts may not be given until an audition has been reviewed and approved by two members of the conducting committee, as indicated on forms provided by the music graduate advisor. The concerts, too, must be approved by the student's master's committee, as indicated on forms provided by the graduate advisor. Auditions and concerts must take place in Santa Barbara, with the full committee or pre-approved substitutes in attendance.

Plan 1 (major performance). Seventy-eight graduate units are required: Six quarters of Music 220 (24 units); 200A; 278A or 278B; 296D or 296E; five quarters of 231 and two quarters of 230 (M.M., choral conducting) or five courses from 230 and two quarters of 231 (M.M., orchestral conducting); three courses from A232-A270; three courses from 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 233; 295A and the equivalent of a full-length concert; 295B and a major performance (the equivalent of a chamber ensemble or small ensemble or large ensemble or mixed concert). Either 295A or 295B should normally be completed by the end of the first year.

Plan 2 (comprehensive examinations). One hundred and twenty-six units are required before the oral examination: nine quarters of Music 220 (36 units); 200A; 278A and 278B; 296D or 296E; 299A and 299B; eight quarters of 231 and two quarters of 230 (M.M., choral conducting) or eight quarters of 230 and two quarters of 231 (M.M., orchestral conducting); six courses from Music A232-A270; six courses from Music 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 233; 295A and the equivalent of a full-length concert by the end of the first year; successful D.M.A. audition for the conducting area committee; 297A and the equivalent of a chamber ensemble or small ensemble or large ensemble or mixed concert; 297B and the equivalent of a full-length concert: either 297A or 297B should normally be completed by the end of the second year; three days of written comprehensive examinations.

Degree Requirements—Keyboard, Strings, Voice, and Woodwinds and Brass Emphases

M.M. students in keyboard, strings, and voice will follow one of two plans: Plan 1 (major performance) or Plan 2 (comprehensive examinations). The former requires two years of coursework and the major performance. The latter requires three years of courses, a successful D.M.A. audition, and a written comprehensive examination. Upon satisfactory completion of this examination, the student will be awarded an M.M. degree and proceed to the oral qualifying examination for the D.M.A. Students continuing for the D.M.A. in emphases in which this degree is offered will normally follow Plan 2. Terminal M.M. students, including all M.M. students in the woodwinds and brass emphasis, will follow Plan 1.

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French, German, or Italian (M.M. Plan 1 Voice requires reading knowledge of two from French, German, and Italian; M.M. Plan 2 Voice requires reading knowledge of French, German, and Italian) before advancement to candidacy.

M.M. recitals may not be given until a recital audition has been reviewed and approved by two members of the appropriate area committee (keyboard, strings, voice, or woodwinds/brass), as indicated on forms provided by the music program advisor. The recitals, too, must be approved by the student's master's committee, as indicated on forms provided by the program advisor. Auditions and recitals must take place in Santa Barbara, with the full committee or pre-approved substitutes in attendance.

Plan 1 (major performance). Seventy-two graduate units are required: Six quarters of Music 220 (24 units); 200A; 278A or 278B; one course from 296A-B-C-F-G; three quarters of A244 ; six courses from A232-A270; three quarters from 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 2 units of electives selected with guidance of faculty advisor; 295A and a full-length recital; 295B and major performance (chamber music recital or concerto or major opera/oratorio role or another full-length recital). Either 295A or 295B should normally be completed by the end of the first year.

Plan 2 (comprehensive examinations). Required before the oral examination: One hundred-fourteen units, including nine quarters of Music 220 (36 units); 200A; 278A and 278B; one course from 296A-B-C; 299A and 299B; three courses from A244; nine courses from Music A232-A270; six courses from Music 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 295A and a full-length recital by the end of the first year; successful D.M.A. audition for the appropriate performance area committee (keyboard, strings, or voice); 297A and a chamber music recital or concerto or major opera/oratorio role or full-length recital; 297B and a full-length recital: either 297A or 297B should normally be completed by the end of the second year; three days of written comprehensive examinations.

Degree Requirements—Piano Accompanying Emphasis

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (282); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French, German, or Italian by the end of their first year of residency and of a second of these before graduation.

M.M. recitals may not be given until a recital audition has been reviewed and approved by two members of an appropriate area committee, as indicated on forms provided by the music program advisor. The recitals, too, must be approved by the student's master's committee, as indicated on forms provided by the program advisor. Auditions and recitals must take place in Santa Barbara, with the full committee or pre-approved substitutes in attendance.

Eighty-two graduate units are required: Six quarters of Music 220 (piano instruction, 18 units); six quarters of 235 (18 units); 200A; 278A or 278B; one course of 296A or 296B or 296C; three quarters of A244; three quarters of 258; three courses from 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 295A and a full-length recital; 295B and a major performance (chamber music recital or another full-length recital). Either 295A or 295B should normally be completed by the end of the first year.

Doctor of Philosophy—Music

Admission

The department requires completion of a master of arts degree in music from UCSB or a degree based on equivalent training. Students with a master of arts from another institution will take at least two additional years of graduate coursework for the doctor of philosophy. In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB."

Degree Requirements—Composition Emphasis

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102); 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B); Orchestration (106, 107). HISTORY: Medieval (279) *or* Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of two languages from French, German, or Italian by the end of their first year of residency. Students may substitute a computer music language for the second language. The computer-music language, Cmusic, may be substituted for the second foreign language under the following conditions: (1) successful completion of 209IA and 209IB and (2) composition of a substantial computer-music work which begins in 209IC, continues beyond that quarter, and demonstrates sufficient competence in applying the language. (Normally, one language examination must be passed by the Ph.D. candidate prior to

acceptance.) Students must have completed the equivalent of Music 200A (Bibliography).

Ninety-two graduate units are required. All students must take Music 207A-B; six quarters of 208; either (a) two courses from 209IA-IB-IC or (b) one course from 209IA-IB-IC and two courses from 209LA-LB-LC; one course from 261, 263-269, 279, 282-284, 287, 291-292; one course from 260D, 276, 293; one course from A232-A270 (including A240); 18 units of electives selected with the guidance of a faculty advisor. Students must also complete one of the following two groups of courses:

Group A: 211A-B; four courses from 250A-B, 252A-B, and 212A-B.

Group B: 212A-B; four courses from 250A-B, 252A-B and 211A-B.

In addition, all students must take five days of written and oral qualifying exams; write a dissertation consisting of a portfolio of compositions, including one of substantial length; write a document analyzing a major twentieth-century work, to be deposited in the Music Library; and give a concert of their compositions, for which the student supplies a detailed commentary of each piece; oral defense.

Degree Requirements—Ethnomusicology Emphasis

Students must pass sections one through four of the ethnomusicology placement guidance examinations or successfully complete, by the end of their first year of residency, equivalent coursework specified by the ethnomusicology committee. Students must demonstrate reading knowledge of two languages, including one European language chosen from French, German, Italian, or Spanish (proficiency to be demonstrated by the end of the first year of residency), and one additional language relevant to the field of specialization (proficiency to be demonstrated prior to the qualifying exams).

Ninety-six graduate units are required: 200A and 200C, 224, 225, 226, 227A and 227B, 260D, 276; two courses from 262A-G ; five courses from 293A-K; 8 units of music or non-music electives selected with the guidance of faculty advisor; 288 (attendance required during each quarter of residency); A232-A270 (one performance ensemble required during each quarter of residency); five days of written and oral qualifying exams; dissertation; oral defense.

Degree Requirements—Musicology Emphasis

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279); Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge in French and German. Mastery of a third language may also be required in the student's field of specialization. Students in this doctoral emphasis usually demonstrate mastery of French or German by the end of their first year of residency, and demonstrate mastery of the remaining European language by the end of the second year of residency.

One hundred-two graduate units required. The following course are required: Music 200A and 200B; two courses from 201A, 201B and/or 201C (student must take all three if specializing in music prior to 1600); 202A and 202B; nine courses of 203MT; one course from each of the following series: 261A-B, 263A-B, 265A-B, 266A-B, 268A-B, 269A-B; two courses from A232-A270; 8 units in approved fields(s) outside of music selected with guidance of faculty advisor; 36 additional units selected with guidance of faculty advisor; five days of written and oral qualifying exams; dissertation; oral defense.

Continuing students who selected the Plan 2 M.A. degree are required to take only the oral portion of the qualifying examinations.

Degree Requirements—Theory Emphasis

Students must pass the placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must demonstrate reading knowledge of French or German by the end of their first year of residency, and a second language by the end of their second year of residency.

Seventy-two graduate units are required. Music 200A and 200D; 250A-B; 251A-B; 252A-B; one course from A232-A270; six courses of 203MT; 8 units in approved field(s) outside of music selected with guidance of faculty advisor; 24 additional units selected with guidance of faculty advisor; five days of written and oral qualifying exams; dissertation.

Doctor of Musical Arts

The doctor of musical arts degree provides a thorough preparation for the professional performer and the artist-teacher in the areas offered. Candidates for the degree will demonstrate the following: an exceptional degree of technical proficiency and thoroughly professional competence as performers; a thorough and deep command of the solo and chamber music literature in their specialties; a thorough knowledge of the relevant literature in music theory and music history and the kind of thoughtful musicianship that results from disciplined and careful study of music theory, music history, and musical styles.

Admission

Applicants must have completed a master of music degree or its equivalent. A live audition is required, comparable in scope to a full recital demonstrating the applicant's command of several musical styles. Applicants will submit a repertory list and programs and reviews of concerts performed. In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB."

Degree Requirements—Conducting Emphasis

Continuing students in conducting who selected the Plan 2 M.M. degree will have completed all unit requirements for the D.M.A. degree and are required to take only the oral portion of the qualifying examinations.

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must have completed the equivalent of 200A (Bibliography). Choral conducting students must demonstrate reading knowledge of French, German, and Italian; orchestral conducting students two of French, German, and Italian. Choral conducting students must demonstrate proficiency in piano and voice; orchestral conducting students must demonstrate proficiency in piano, or proficiency in an orchestral instrument plus basic proficiency in piano.

Pre-candidacy concerts may not be given until an audition has been reviewed and approved by two members of the conducting committee, as indicated on forms provided by the music graduate advisor. The concerts, too, both pre- and post-candidacy, must be approved by the student's doctoral committee, as indicated on forms provided by the graduate advisor. Auditions and concerts must take place in Santa Barbara, with the full committee or pre-approved substitutes in attendance.

Admission to candidacy will be established by fulfillment of the residency requirement of six quarters, fulfillment of language requirements, presentations of two concerts (as specified below), and passing the written and oral D.M.A. qualifying examinations. In addition, the following requirements must be met before advancement to candidacy: Eighty-two graduate units: Six quarters of Music 220 (24 units); 278A and 278B; 296D or 296E; 299A and 299B; five quarters of 231 (D.M.A., choral conducting) or 230 (D.M.A., orchestral conducting); three courses from Music A232-A270; three courses from Music 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 233, if not previously fulfilled for an M.M. degree; 297A and the equivalent of a chamber ensemble or small ensemble or large ensemble or mixed concert; 297B and the equivalent of a full-length concert (either 297A or 297B should normally be completed by the end of the second year); four days of written and oral qualifying examinations. After advancement to candidacy: the equivalent of two additional full-length concerts, tapes of which are deposited in the

Music Library; D.M.A. research document, (scholarly study or thesis presenting an original contribution or insight into some aspect related to the candidate's field of study) deposited in the UCSB Davidson Library; and an oral defense of the research document, preceded by a public lecture-recital presentation related to the research document topic.

Note: Continuing students who have successfully completed the Plan 2 M.M. degree will have fulfilled all D.M.A. unit course requirements, are exempt from the written qualifying examinations, and are required to take only the oral qualifying examinations before advancement to candidacy.

Degree Requirements—Keyboard, Strings, and Voice Emphases

Continuing students in keyboard, strings, and voice who selected the Plan 2 M.M. degree will have completed all unit requirements for the D.M.A. degree and are required to take only the oral portions of the qualifying examinations.

Students must pass placement guidance examinations in the subject areas denoted by capital letters or successfully complete equivalent coursework before advancement to candidacy. Course numbers are shown in parentheses. THEORY: 16th-Century Motet (102) or 18th-Century Fugue (103); Figured Bass (5A-F); Tonal Analysis (160A); 20th-Century Analysis (160B). HISTORY: Medieval (279) or Renaissance (291); Baroque (292); Classical (282); Romantic (283); 20th Century (284). MUSICIANSHIP: (204A-B-C). Students must have completed the equivalent of 200A (Bibliography). Students must demonstrate reading knowledge of French, German, or Italian (D.M.A. Voice: French, German, and Italian).

D.M.A. pre-candidacy recitals may not be given until a recital audition has been reviewed and approved by two members of the appropriate area committee (keyboard, strings, or voice), as indicated on forms provided by the music graduate advisor. The recitals, too, both pre- and post-candidacy, must be approved by the student's doctoral committee, as indicated on forms provided by the graduate advisor. Auditions and recitals must take place in Santa Barbara, with the full committee or pre-approved substitutes in attendance.

Admission to candidacy will be established by fulfillment of the residency requirement of six quarters, fulfillment of language requirements, presentations of two recitals or concerts (as specified below), and passing the written and oral D.M.A. qualifying examinations. In addition, the following requirements must be met before advancement to candidacy: Seventy-two graduate units: Six quarters of Music 220 (24 units); 278A and 278B; one course of 296A-B-C; 299A and 299B; six courses from A232-A270; three courses from Music 200B, 201, 202, 211, 212, 223-227, 250-252, and/or 260-294; 297A and a chamber music recital or concerto or major opera/oratorio role or full-length recital; 297B and a full-length recital: either 297A or 297B should normally be completed by the end of the first year; four days of written and oral qualifying examinations. After advancement to candidacy: the equivalent of two additional full-length concerts, tapes of which are deposited in the Music Library; D.M.A. research document, (scholarly study or thesis presenting an original contribution or insight into some aspect related to the candidates's field of study) deposited in the UCSB Davidson Library; and an oral defense of the research document, preceded by a public lecture-recital presentation related to the research document topic.

Note: Continuing students who have successfully completed the Plan 2 M.M. degree will have fulfilled all D.M.A. unit course requirements, are exempt from the written qualifying examinations, and are required to take only the oral qualifying examinations before advancement to candidacy.

Music Courses

LOWER DIVISION

4A-B-C-D-E-F. Musicianship
(1-1-1-1-1-1) STAFF

Prerequisites: placement exam. A grade of at least C- is required in each course of the Music 4 series. Must be taken consecutively, and concurrently with the Music 5 series.

A practical course in sight singing, aural analysis, and rhythmic studies.

5A-B-C-D-E-F. Music Theory
(3-3-3-3-3-3) STAFF

Prerequisites: placement exam. A grade of at least C- is required in each course of the Music 5 series. Must be taken consecutively, and concurrently with the Music 4 series.

Music theory sequence: tonal and chromatic harmony, analysis, counterpoint, twentieth-century techniques, formal structures in music.

6. Jazz Fundamentals
(2) KENNERLY

Prerequisites: Music 5C.

Letter grade required for majors. May be repeated for credit to a maximum of 8 units, but only 2 units may be applied toward the major.

Introduction to jazz harmony, scales, and improvisation. Drill in ear training and beginning keyboard.

8. Class Composition
(2) STAFF

Prerequisite: consent of instructor.

Primarily for the major. May be repeated for credit to a maximum of 18 units, but only 12 units may be applied toward the major.

Assignments in basics of music writing. For a selected number of students enrolled in Music 5A-F. (F,W,S)

11. Fundamentals of Music
(4) STAFF

For the nonmajor.

The study of notes, scales, triads, inversions, rhythm, harmony, and musical terminology. Laboratory activities include keyboard orientation, sight-singing, and ear training. (F,W,S)

15. Music Appreciation
(4) STAFF

Not open to music majors.

A selective survey of music of Western civilization, evolution of forms, styles, media. Designed to enable the student to listen with understanding. (F,W,S)

17. World Music
(4) MARCUS

No previous training in music required.

An introductory course surveying the unity and diversity of folk, traditional, and classical music of the non-Western world. Emphasis given to dance, theatre, musical instruments, and the role of music in society. (F,W,S)

20A. Elementary Voice
(1) STAFF

Prerequisite: Music 11. Placement by audition.

May be repeated for credit in combination with Music 20B and 20C to a maximum of 6 units, but only 3 units may be applied toward the major.

Elementary voice lessons, primarily for the instrumental music major and the music minor. (F,W,S)

20B. Elementary Voice
(1) STAFF

Prerequisite: Music 11. Placement by audition.

May be repeated for credit in combination with Music 20A and 20C to a maximum of 6 units, but only 3 units may be applied toward the major.

Elementary voice lessons, primarily for the instrumental music major and the music minor. (F,W,S)

20C. Elementary Voice
(1) STAFF

Prerequisite: Music 11. Placement by audition.

May be repeated for credit in combination with Music 20A and 20B to a maximum of 6 units, but only 3 units may be applied toward the major.

Elementary voice lessons, primarily for the instrumental music major and the music minor. (F,W,S)

22. Practicum in World Music Performance
(1) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 6 units.

Applied instruction in non-Western instruments or vocal styles.

25. Intermediate Voice
(1-3) INGHAM, MOSHER, SOKOL

Prerequisites: by audition; Consent of instructor and department. .

Primarily for music majors. May be repeated for credit to a maximum of 27 units.

Intermediate voice lessons. Taken for 3 units per quarter by BM Voice Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

26A. Intermediate Double Bass
(1-3) ABONDOLO

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate double bass lessons. Taken for 3 units per quarter by BM Double Bass Emphasis majors, and for 1 unit per quarter by all others.

26B. Intermediate Cello
(1-3) RUTKOWSKI

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate cello lessons. Taken for 3 units per quarter by BM Cello Emphasis majors, and for 1 unit per quarter by all others.

26C. Intermediate Guitar
(1-3) HEAD

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate guitar lessons. Taken for 3 units per quarter by BM Guitar Emphasis majors, and for 1 unit per quarter by all others.

26D. Intermediate Viola
(1-3) OHYAMA

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate viola lessons. Taken for 3 units per quarter by BM Viola Emphasis majors, and for 1 unit per quarter by all others.

26E. Intermediate Violin
(1-3) STAFF, OHYAMA

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate violin lessons. Taken for 3 units per quarter by BM Violin Emphasis majors, and for 1 unit per quarter by all others.

27A. Intermediate Bassoon
(1-3) RADFORD

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate bassoon lessons. Taken for 3 units per quarter by BM Bassoon Emphasis majors, and for 1 unit per quarter by all others.

27B. Intermediate Clarinet
(1-3) BAMBACH

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate clarinet lessons. Taken for 3 units per quarter by BM Clarinet Emphasis majors, and for 1 unit per quarter by all others.

27C. Intermediate Flute
(1-3) FELBER

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate flute lessons. Taken for 3 units per quarter by BM Flute Emphasis majors, and for 1 unit per quarter by all others.

27D. Intermediate Oboe
(1-3) REED

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate oboe lessons. Taken for 3 units per quarter by BM Oboe Emphasis majors, and for 1 unit per quarter by all others.

28A. Intermediate French Horn
(1-3) GROSS

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate french horn lessons. Taken for 3 units per quarter by BM French Horn Emphasis majors, and for 1 unit per quarter by all others.

28B. Intermediate Trombone
(1-3) BOOTH

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate trombone lessons. Taken for 3 units per quarter by BM Trombone Emphasis majors, and for 1 unit per quarter by all others.

28C. Intermediate Trumpet
(1-3) HUNGERFORD

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate trumpet lessons. Taken for 3 units per quarter by BM Trumpet Emphasis majors, and for 1 unit per quarter by all others.

28D. Intermediate Tuba
(1-3) BOOTH

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate tuba lessons. Taken for 3 units per quarter by BM Tuba Emphasis majors, and for 1 unit per quarter by all others.

28E. Intermediate Euphonium/Baritone
(1) BOOTH

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 9 units.

Intermediate euphonium or baritone lessons.

29. Intermediate Percussion
(1-3) MAGNUSSEN

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate percussion lessons. Taken for 3 units per quarter by BM Percussion Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

31A-B-C-D-E-F. Class Piano
(1-1-1-1-1-1) THOMAS

Prerequisite: placement by audition. A grade of at least C- is required in each course of the music 31 series.

Primarily for music majors. Must be taken consecutively.

Includes scales, sight-reading and appropriate piano literature. (F,W,S)

32A-B-C-D-E-F. Class Piano
(1-1-1-1-1-1) THOMAS

Prerequisite: placement by audition.

Primarily for music majors. May be repeated for credit.

Optional continuation of Music 31. Intermediate class piano instruction. Includes scales, sight-reading, transposition, harmonization at the keyboard, with emphasis on piano literature. (A,D: F; B,E: W; C,F: S)

33. Intermediate Piano
(1-3) OBERACKER, BERKOWITZ, ASCHE

Prerequisites: by audition; consent of instructor and department.

May be repeated for credit to a maximum of 27 units.

Intermediate piano lessons. Taken for 3 units per quarter by BM Piano Emphasis and BM Piano Accompanying Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

35A-B-C-D-E-F. Piano Accompanying
(1-1-1-1-1-1) HARLEY

Prerequisites: Music 33 (may be taken concurrently) or piano and accompanying emphasis majors only; consent of instructor.

An introduction to the study of accompaniment repertoire and performance (art song, instrumental literature, orchestral transcriptions, sight-reading). (A,B:F; B,E: W; C,F:S)

51. Vocal and Instrumental Coaching
(1) HARLEY, THOMAS

Prerequisite: concurrent vocal or instrumental study (Music 25-29).

May be repeated for credit to a maximum of 9 units, but only 3 units may be applied toward the major.

Musical preparation of vocal or instrumental works from a coach/accompanist.

88. Intermediate Composition
(2) STAFF

Prerequisites: passing of freshman composition portfolio and consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 6 units may be applied toward the major.

Preparation for Music 108. For selected students.

94. Freshman Audition
(1) STAFF

Preparation of freshman audition.

94B. Freshman Composition Portfolio
(1) STAFF

Prerequisite: consent of instructor.

Preparation of freshman composition portfolio.

95A-B-C. BA Sophomore Project
(2-2-2) STAFF

A. Audition: optional, with consent of instructor.

B. Composition Portfolio: optional, with consent of instructor.

C. Paper: required, if neither A nor B taken.

96A-B-C. Honors Project
(2-2-2) STAFF

Prerequisites: honors students only; consent of instructor and department.

Public presentation of sophomore project:

A. Public performance of sophomore audition (BM performance; BA by petition)

B. Public performance of sophomore composition (BM composition; BA by petition)

C. Public presentation of sophomore paper (BA music)

97. BM Sophomore Audition
(2) STAFF

Prerequisites: passing of freshman audition (may be waived for transfer students); consent of instructor.

Preparation of sophomore audition.

97B. BM Sophomore Composition Portfolio
(2) STAFF

Prerequisites: passing of freshman composition portfolio (may be waived for transfer students); consent of instructor.

Preparation of sophomore composition portfolio.

98. Readings in Music
(1-3) STAFF

Prerequisite: consent of instructor.

Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit up to 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Critical review and discussion of related topics in musicology, ethnomusicology, composition, theory, or performance. (F,W,S)

99. Introduction to Musical Research
(1-3) STAFF

Prerequisite: consent of instructor.

Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit up to 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research of work in a research group in topics in musicology, ethnomusicology, composition, theory, or performance. (F,W,S)

UPPER DIVISION

101A-B-C. Twentieth-Century Techniques
(2-2-2) HALADYNA

Prerequisite: Music 5E.

Music 101A not open for credit to students who have completed Music 101.

A study of contemporary techniques, through both written work and analysis. (W)

102. Sixteenth-Century Counterpoint
(3) STAFF

Prerequisite: Music 5E.

A study of contrapuntal practices of the sixteenth century through analysis and compositional exercises. (S)

103. Eighteenth Century Counterpoint
(3) STAFF

Prerequisite: Music 5E.

A study of contrapuntal practices of the eighteenth century through analysis and compositional exercises. (W)

104. Musical Instruments of the World
(3) HSU

A systematic study of musical instruments in world cultures involving classification, distribution, acoustical phenomena, and physical typologies. Emphasis on cross-cultural comparative analysis of solo and ensemble groupings, and the role of musical instruments in the study of acculturation, historical diffusion, and aesthetics.(F,W,S)

105. Field and Laboratory Methods in Ethnomusicology
(3) STAFF

Prerequisite: Music 176.

The development and execution of field research designs. Practical field experience using various techniques of data collection and management including music recording, photography, filming, questionnaires, and interviewing. The use and interpretation of standard and innovative laboratory methods for processing data, including computer analysis.

106A-B-C. Orchestration
(2-2-2) HALADYNA

Prerequisite: Music 5E.

Music 106A not open for credit to students who have completed Music 106. Music 106B not open for credit to students who have completed Music 107.

The study of orchestration through written work and analysis. (F)

108. Advanced Composition
(1-3) FEIGIN

Prerequisites: Music 5F; passing of sophomore composition portfolio; consent of instructor.

May be repeated for credit in combination with Music 108A-B-C and 109A-B-C to a maximum of 36 units, but only 18 units may be applied toward the major.

Individual instruction in composition. Assignments using small and large forms.

109IA. Direct Digital Synthesis, Processing and Composition
(3) KUCHERA-MORIN

Prerequisites: upper-division standing; consent of instructor; music majors must have taken Music 5E.

First quarter of general purpose computing for computer music applications. Topics include: introduction to the UNIX operating system and the vi editor, music synthesis using C-music program and score input programs.

109IB. Direct Digital Synthesis, Processing and Composition
(3) KUCHERA-MORIN

Prerequisite: Music 109IA.

Second quarter of a three-quarter series concentrating on computer instrument design using C-based computer music software and exploring sythesis applications of frequency modulation, amplitude modulation, additive/subtractive synthesis etc., computer processing of sound, and computer music composition.

109IC. Direct Digital Synthesis, Processing and Composition
(3) KUCHERA-MORIN

Prerequisites: Music 109IA and 109IB.

Third quarter of a three-quarter series concentrating on advanced C-based computer programs for digital signal processing, advanced instrument design. Most of the emphasis in the quarter is music composition.

109LA. Real-Time Digital Synthesis, Processing and Composition
(2) ROADS

Prerequisites: upper-division standing; consent of instructor; music majors must have taken Music 5E.

A maximum of 12 units total allowed for Music 109LA, 109LB, and 109LC.

First quarter of a three-quarter series course in real-time digital synthesis and composition will concentrate on multi-track recording, mixing, digital signal processing using micro-computers and special purpose DSP equipment for music composition.

109LB. Real-Time Digital Synthesis, Processing and Composition
(2) ROADS

Prerequisite: Music 109LA.

A maximum of 12 units total allowed for Music 109LA, 109LB, and 109LC.

Second quarter of a three-quarter series course will concentrate on digital synthesis (primarily frequency modulation, simple and complex; but also amplitude modulation and additive synthesis) using micro-computers, digital synthesizers and processing equipment for music composition.

109LC Real-Time Digital Synthesis, Processing and Composition
(2) ROADS

Prerequisites: Music 109LA and 109LB.

A maximum of 12 units total allowed for Music 109LA, 109LB, and 109LC.

Third quarter of a three-quarter series course will concentrate on real-time computer music composition with micro-computers and digital synthesis/processing equipment.

109N. Special Topics in Computer Music and Digital Signal Processing
(3) KUCHERA-MORIN, ROADS

Prerequisites: Music 109LA-B-C or 109IA-B-C.

May be repeated for credit to a maximum of 12 units.

Advanced topics in computer music composition, synthesis, and digital signal processing.

109T. Music and Media
(2-4) KUCHERA-MORIN

Prerequisite: open to music majors only or nonmajors with consent of instructor.

Creative projects in synthesized and acoustic sound. Synchronization with film using SMPTE time code. Interdisciplinary collaborations. Previous experience with computer/synthesizer/film desirable.

112A. History of Music: The Middle Ages
(3) PLANCHART

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from antiquity to 1400.

112B. History of Music: The Renaissance
(3) PRIZER

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from 1400 to 1600. (F)

112C. History of Music: The Baroque
(3) FREEMAN, PRIZER

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from 1600 to 1750.

112D. History of Music: The Classic Era
(3) FREEMAN, PLANCHART

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from 1725 to 1825. (W)

112E. History of Music: The Romantic Era
(3) BECKERMAN

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from 1790 to 1918.

112F. History of Music: The Twentieth Century
(3) PLANCHART

Prerequisites: Music 5C; consent of instructor.

History of music in Western civilization from 1870 to the present. (S)

114. Music and Popular Culture in Twentieth-Century America
(4) STAFF

Prerequisites: upper-division standing; not open to music majors.

A survey of the relationships between music and popular culture in twentieth-century America. Music to be discussed will include blues, jazz, and rock, as well as classical music. Emphasis will be on cultural, rather than technical aspects of music. (F,W,S)

115. Symphonic Music
(4) RUTKOWSKI

Prerequisite: Music 15.

For the nonmajor.

A study of selected symphonic works. (S)

118A-Z. History and Literature of Great Composers in Western Music
(4) STAFF

Prerequisite: Music 15.

For the nonmajor.

A survey of the life and stylistic development of the music of an individual composer selected from the fourteenth to the twentieth century.

A. Ludwig van Beethoven
B. J. S. Bach
C. Wolfgang Amadeus Mozart
D. Frederic Chopin
E. Haydn
F-Z. Other composers

119A. Music and Politics
(4) HALL

No previous training in music required. Primarily for non-majors: also open to majors.

A study of the interaction between music and politics from the fourteenth century to the present. Includes discussion of relevant art from each period.

120A. Orchestral Conducting
(2) OHYAMA

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

An introduction to the fundamentals of orchestral conducting and score reading.

120B. Choral Conducting
(2) GERVAIS

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

An introduction to the fundamentals of choral conducting and score reading.

120C. Advanced Conducting
(1) GERVAIS, OHYAMA

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 6 units, but only 2 units may be applied toward the major.

Applied instruction in choral and orchestral conducting.

120T. Choral Techniques
(2) GERVAIS

Prerequisites: Music 120B (may be taken concurrently); consent of instructor.

Aspects of choral techniques including: development of concert programs and rehearsal plans, rehearsal procedures, types of vocal ensembles and seating configurations, acoustical considerations, performance and recording procedures, long-term programming and artistic development, social and organizational aspects of vocal ensemble.

122. Practicum in World Music Performance
(1) STAFF

Prerequisites: consent of instructor. Passing of sophomore audition for Bachelor of Music Composition emphasis majors.

May be repeated for credit to a maximum of 6 units.

Applied instruction in non-Western instruments or vocal styles.

125. Advanced Voice
(1-4) INGHAM, MOSHER, SOKOL

Prerequisite: passing of voice sophomore audition.

May be repeated for credit to a maximum of 36 units.

Advanced voice lessons. Taken for 4 units per quarter by BM Voice Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

126A. Advanced Double Bass
(1-4) ABONDOLO

Prerequisite: passing of double bass sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced double bass lessons. Taken for 4 units per quarter by BM Double Bass Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

126B. Advanced Cello
(1-4) RUTKOWSKI

Prerequisite: passing of cello sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced cello lessons. Taken for 4 units per quarter by BM Cello Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

126C. Advanced Guitar
(1-4) HEAD

Prerequisite: passing of guitar sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced guitar lessons. Taken for 4 units per quarter by BM Guitar Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

126D. Advanced Viola
(1-4) OHYAMA

Prerequisite: passing of viola sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced viola lessons. Taken for 4 units per quarter by BM Viola Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

126E. Advanced Violin
(1-4) STAFF, OHYAMA

Prerequisite: passing of violin sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced violin lessons. Taken for 4 units per quarter by BM Violin Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

127A. Advanced Bassoon
(1-4) RAOFORD

Prerequisite: passing of bassoon sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced bassoon lessons. Taken for 4 units per quarter by BM Bassoon Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

127B. Advanced Clarinet
(1-4) BAMBACH

Prerequisite: passing of clarinet sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced clarinet lessons. Taken for 4 units per quarter by BM Clarinet Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

127C. Advanced Flute
(1-4) FELBER

Prerequisite: passing of flute sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced flute lessons. Taken for 4 units per quarter by BM Flute Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

127D. Advanced Oboe
(1-4) REED

Prerequisite: passing of oboe sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced oboe lessons. Taken for 4 units per quarter by BM Oboe Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

128A. Advanced French Horn
(1-4) GROSS

Prerequisite: passing of french horn sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced french horn lessons. Taken for 4 units per quarter by BM French Horn Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

128B. Advanced Trombone
(1-4) BOOTH

Prerequisite: passing of trombone sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced trombone lessons. Taken for 4 units per quarter by BM Trombone Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

128C. Advanced Trumpet
(1-4) HUNGERFORD

Prerequisite: passing of trumpet sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced trumpet lessons. Taken for 4 units per quarter by BM Trumpet Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

128D. Advanced Tuba
(1-4) BOOTH

Prerequisite: passing of tuba sophomore audition.

May be repeated for credit up to a maximum of 36 units.

Advanced tuba lessons. Taken for 4 units per quarter by BM Tuba Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

128E. Advanced Euphonium/Baritone
(1) BOOTH

Prerequisite: passing of euphonium or baritone sophomore audition.

May be repeated for credit up to a maximum of 9 units.

Advanced euphonium or baritone lessons.

129. Advanced Percussion
(1-4) MAGNUSSEN

Prerequisite: passing of percussion sophomore audition.

May be repeated for credit to a maximum of 36 units.

Advanced percussion lessons. Taken for 4 units per quarter by BM Percussion Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

133. Advanced Piano
(1-4) OBERACKER, BERKOWITZ, ASCHE

Prerequisite: passing of piano sophomore audition. May be repeated for credit to a maximum of 36 units.

Advanced piano lessons. Taken for 4 units per quarter by BM Piano Emphasis and BM Piano Accompanying Emphasis majors, and for 1 unit per quarter by all others. (F,W,S)

135A-B-C-D-E-F. Piano Accompanying
(2-2-2-2-2-2) HARLEY

Prerequisites: Music 35A-B-C or Music 133 (may be taken concurrently); piano and accompanying emphasis majors only; consent of instructor.

May be repeated for credit to a maximum of 4 units each.

An advanced study of accompaniment repertoire and performance (art song, instrumental literature, orchestral transcription, sight-reading). (A,D:F; B,E:W; C,F:S)

150. Opera/Song Repertoire
(2) SOKOL

Prerequisite: Music 25 or 33.

Letter grade required for majors. May be repeated for credit to a maximum of 12 units.

A detailed study of operatic literature and concert literature (lieder, melodies, songs, and pieces with instruments). The interpretation of vocal music as a preparation for performance. (F,W,S)

151. Vocal and Instrumental Coaching
(1) STAFF, THOMAS

Prerequisite: concurrent upper-division vocal or instrumental study (Music 125-129).

May be repeated for credit to a maximum of 9 units, but only 3 units may be applied toward the major.

Musical preparation of vocal or instrumental works.

155. Guitar Repertoire
(2) HEAD

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 6 units, but only 2 units may be applied toward the major.

A study of selected topics relating to the performance, composition, theory, and history of guitar music.

157. Composers Forum
(1) STAFF

Prerequisites: Music 108A-B.

May be repeated for credit to a maximum of 6 units.

Presentation and discussion of new works by students, faculty, and guest composers. (F,W,S)

158A-B-C-D. Diction
(1-1-1-1) BRANTON, INGHAM

Prerequisite: for Music 158A-B: Music 25. For Music 158C-D, primarily for voice majors; Music 25.

A. English diction (W)
B. Italian diction (F)
C. German diction (W)
D. French diction (S)

160A. Tonal Analysis
(3) STAFF

Prerequisites: Music 4E and 5E.

Analysis of small-scale and large-scale formal structures through mid-classical period.

160B. Twentieth Century Analysis
(3) HALL

Prerequisites: Music 4E and 5E.

Analysis of non-tonal and twelve-tone music.

160C. Advanced Tonal Analysis
(3) STAFF

Prerequisites: Music 4F, 5F, and 160A.

Continuation of Musics 160A, advanced tonal analysis through nineteenth century works.

160D. Tuning and Temperament
(3) MARCUS

Prerequisite: consent of instructor.

Survey of a number of tuning systems found around the world, including those of ancient Greece, Europe, India, China, the Arab Middle East, Turkey, and Indonesia. The mathematical, aesthetic, and symbolic bases of each system will be considered.

160E. The Arabic System of Melodic Modes: The Maqamat
(3) MARCUS

Prerequisite: consent of instructor.

An intensive examination of the system of melodic modes (maqamat) that governs present-day practice in the eastern Arab world. Emphasis given to theoretical issues (quarter tones, tetrachordal structures, and theories of intonation), analysis of standard repertoire, and procedures governing improvisation.

161. Keyboard Literature
(3) BERKOWITZ

Prerequisites: Music 5F, 160A, 112D, and 112E (112E may be taken concurrently).

A study of the history and literature of keyboard music from the Baroque through the twentieth century.

162. Choral Literature
(3) GERVAIS

Prerequisites: three quarters of the Music 112A-F series.

A historical and analytical survey of major choral works from the seventeenth century to the present.

165. Art Song
(3) BECKERMAN

Prerequisites: three quarters of the Music 112A-F series.

The development of the art song with special emphasis on the poetry and musical styles which evolved in each historical period.

167. National Elements in Music
(3) BECKERMAN

Prerequisites: three quarters of the Music 112A-F series.

In-depth discussion and analysis of music concentrating on the nineteenth and twentieth centuries of a particular country.

168A. The Musician and Society
(3) STAFF

An examination of concepts of musicians in world cultures. Special attention given to musicians' lives and roles as shaped by cultural and social forces, training, economic remuneration, and idiosyncratic expression.

168B. The Anthropology of Music
(3) STAFF

Not open for credit to students who have completed Music 170A.

An examination of music performance traditions as cultural and social phenomena. Special attention given to theoretical formulations of musical anthropology.

168C. Music and Religion
(3) STAFF

Not open for credit to students who have completed Music 166A.

An examination of the structural role and symbolic functions of music in religious systems. Case studies will be drawn from diverse world traditions.

168D. Music and Dance
(3) STAFF

Not open for credit to students who have completed Music 132A.

A critique of dance ethnology scholarship and applications in analysis of music and movement interrelationships in diverse world performance traditions.

168E. Women and Music in World Cultures
(3) STAFF

Not open for credit to students who have completed Music 121A.

An analysis of women's roles in musical traditions as created, ascribed, and appropriated. Feminist perspectives on musical and social issues will be discussed.

168F. Cross-cultural Aesthetics of Music
(3) STAFF

Not open for credit to students who have completed Music 194.

A cross-cultural examination of aesthetic values, theories, and practices. Case studies from diverse world traditions will include historical and contemporary perspectives.

168G. Other Issues in Ethnomusicology
(3) STAFF

May be repeated for credit to a maximum of 12 units.

A study of other cultural issues in ethnomusicology. Specific issues or topics will vary by quarter and will be announced in advance by the department.

168X. Umm Kulthum: Her Music, Her Life, Her Times
(3) MARCUS

Prerequisite: consent of instructor.

Analysis of the music, life and times of the predominant Arab singer of the twentieth century. Individual projects may focus on music or text analysis, issues of gender, nationalism, agency, performance, practice, and investigation of related arts (film, novels, etc.).

169. Notation and Transcription in Ethnomusicology
(3) FALES

Survey of existing notational systems and exercises in ethnomusicology and transcription, with particular attention to issues related to the visual representation of performed musical sound.

173. Studies in Music Theory
(3) STAFF

Prerequisites: Music 5A-F.

May be repeated for credit to a maximum of 6 units.

Selected topics in musical analysis.

175A. Music Cultures of the World: Latin America and the Caribbean
(3) STAFF

Not open for credit to students who have completed Music 193A or 194B.

Cultural and historical study of music in Latin America and the Caribbean. Emphasis on processes of musical acculturation and analysis of representative genres and works.

175B. Music Cultures of the World: African America
(3) STAFF

Not open for credit to students who have completed Music 193B or 194A.

Cultural and historical study of African American music in the United States. Topics include musical survivals, processes of acculturation and syncretecism.

175C. Music Cultures of the World: Africa
(3) FALES

Not open for credit to students who have completed Music 193 or 193C.

An intensive study of the music traditions of sub-Saharan Africa. Topics include historical background, vocal and instrumental performance traditions, dance, musicians, and analysis of musical structure.

175D. Music Cultures of the World: Asian America
(3) STAFF

Not open for credit to students who have completed Music 193D.

A study of the origins, cultural values, functions, and social-economic realities of Asian American music in multicultural and multiethnic America. Special attention given to the creative works by second and third generation Asian Americans.

175E. Music Cultures of the World: China
(3) HSU

Not open for credit to students who have completed Music 132 or 193E.

An examination of universal music issues through case studies of Chinese musical works, musicians, theories, and practices. Special attention given to interdisciplinary understanding of Chinese music and culture.

175F. Music Cultures of the World: The Middle East
(3) MARCUS

Not open for credit to students who have completed Music 121 or 193F.

Arab, Turkish, and Persian music traditions from historical, cultural, and musicological perspectives. Emphasis given to the position of music in Islam, present-day performers, and modal and rhythmic structures.

175G. Music Cultures of the World: India
(3) MARCUS

Not open for credit to students who have completed Music 116 or 193G.

A survey of music traditions of the Indian subcontinent from classical to folk and popular. Emphasis on the position of music in Hindu philosophy, the role of music in society, musical instruments, and modal and rhythmic structures (raga and tala).

175H. Music Cultures of the World: Korea
(3) STAFF

Not open for credit to students who have completed Music 193H.

An examination of representative genres of Korean music and the ways Koreans preserve and develop traditional musical culture in the twentieth century. Special attention on the roles of music in South Korea's rise as a newly industrialized nation.

175I. Music Cultures of the World: Japan
(3) STAFF

Not open for credit to students who have completed Music 193I.

An examination of representative Japanese musical genres, masterpieces, and musicians. Special attention on the differences between insider and outsider interpretations and receptions of Japanese music.

175J. Music Cultures of the World: Pacific Islands
(3) STAFF

Not open for credit to students who have completed Music 193J.

An examination of themes and issues relevant to Pacific Islands performance traditions including interpretation of sources, musical ramifications of intercultural contacts, and contemporary performance contexts.

175K. Music Cultures of the World: Other Regions
(3) STAFF

May be repeated for credit to a maximum of 12 units.

A study of music traditions and genres from other regions of the world. Specific regions studied will vary by quarter and will be announced in advance by the department.

176. Studies in Ethnomusicology
(3) STAFF

Prerequisites: upper-division standing.

An introduction to the field of ethnomusicology using theories and methods derived from the social sciences and humanities. Topic areas to include transcription and analysis, musicians, musical instruments, music acculturation, and the function of music in society.

177. Opera and Music Drama
(3) STAFF

Prerequisites: three quarters of the Music 112A-F series.

A study of the history and literature of opera and music drama from their origins to the present day.

178A-B. Performance Practices
(3-3) FREEMAN, KRAFT

Prerequisites: three quarters of the Music 112A-F series.

A. A study, through selected works, of historical performance practices of vocal and instrumental music from the Middle Ages through the romantic era. Problems to be treated will include instrumentation, ornamentation, figured bass, rhythm, tempo, articulation, and expression.

B. A study, through selected works, of performance practices of twentieth-century music, with particular attention to new notational concepts and their execution.

179. Studies in Medieval Music
(3) PLANCHART

Prerequisites: Music 112A and two additional quarters of the Music 112A-F series.

Introduction to the liturgy and music of the Middle Ages.

180. Studies in Renaissance Music
(3) PRIZER

Prerequisites: Music 112B and two additional quarters of the Music 112A-F series.

Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

181. Studies in Baroque Music
(3) FREEMAN, PRIZER

Prerequisites: Music 112C and two additional quarters of the Music 112A-F series.

A selective study of various stylistic and historical aspects of baroque music.

182. Studies in Classical Music
(3) FREEMAN

Prerequisites: Music 112D and two additional quarters of the Music 112A-F series.

A study of the classical style from its source in the early eighteenth century to its culmination in the works of Haydn, Mozart, and Beethoven.

183. Studies in Romantic Music
(3) BECKERMAN

Prerequisites: Music 112E and two additional quarters of the Music 112A-F series.

The development of romanticism from eighteenth-century sources through the works of Strauss and Mahler.

184. Studies in Contemporary Music
(3) STAFF

Prerequisites: Music 112F and two additional quarters of the Music 112A-F series.

A course which traces the stylistic development of music since 1910 and discusses various trends in compositional techniques.

184E. History and Development of Electronic Music
(3) STAFF

Prerequisites: Music 112F and two additional quarters of the Music 112A-F series.

A study of the development of electronic music with emphasis on styles and composers.

185. History of Film Music
(3) HALL

Prerequisites: junior and senior music majors; consent of instructor.

The history of film music from silent film to present. Topics include style characteristics of major film composers and techniques used for various genres.

187. Strauss and Hofmannsthal
(3) HSU

Prerequisites: Music 112E and two additional quarters from the Music 112A-F series.

A course in the collaboration between composer and poet. A study of the operas, the correspondence, and related developments in German music in the early twentieth century.

188. Ethnomusicology Forum
(1) STAFF

Prerequisite: consent of instructor.

May be repeated for credit in combination with Music 172 to a maximum of 6 units.

A forum for the presentation of research and performances by students, faculty, and visiting scholars and performers. Students must be currently involved in a research project. (F,W,S)

191. Special Topics
(2-4) STAFF

Prerequisites: upper-division standing; consent of instructor.

May be repeated for credit to a maximum of 12 units.

Special seminar in selected problems of current musicology, ethnomusicology, theory, or performance.

192. B.A. Senior Project
(3) STAFF

Prerequisites: open to senior music majors only.

Preparation of senior audition, composition, or paper.

195. Junior Recital
(2) STAFF

Prerequisite: passing of B.M. sophomore audition; open to upper-division bachelor of music performance emphasis majors only.

Preparation of junior recital.

195B. Junior Composition Portfolio
(2) STAFF

Prerequisites: passing of B.M. sophomore composition portfolio; consent of instructor; open to upper-division bachelor of music composition emphasis majors only.

Preparation of junior composition portfolio.

196. Honors Music
(4) STAFF

Prerequisites: upper-division standing; honors students only; consent of instructor and department.

An undergraduate seminar for honor students. Carefully selected topics intended to foster excellence in research, theory, composition, or performance.

197. Senior Recital
(3) STAFF

Prerequisites: passing of junior recital; open to senior bachelor of music performance emphasis majors only.

Preparation of senior recital.

197B. Senior Composition Portfolio and Recital
(3) STAFF

Prerequisites: passing of junior composition portfolio; consent of instructor; open to senior bachelor of music composition emphasis majors only.

Preparation of senior composition portfolio.

198. Readings in Music
(1-4) STAFF

Prerequisites: upper-division standing; completion of three quarters of the Music 112A-F series; consent of instructor.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Music 198 may be repeated to a maximum of 16 units.

Critical review and discussion of related topics in musicology, ethnomusicology, composition, theory, or performance.

199. Individual Research in Music
(1-4) STAFF

Prerequisites: upper-division standing; completion of three quarters of the Music 112A-F series; consent of instructor.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Music 199 may be repeated to a maximum of 16 units. No more than 4 units may be applied to the music major.

Independent research under the guidance of a faculty member in the department. Course offers qualified students the opportunity to undertake independent research or work in a research group in topics in musicology, ethnomusicology, composition, theory, or performance.

199RA. Independent Research Assistance in Music
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Music; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters. No more than 4 units in combination with Music 199 may be applied to major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students are limited to 4 units per quarter and 16 units total in all Music 198/199/199RA courses.

Faculty supervised research assistance.

GRADUATE COURSES

200A. Bibliography and Research Techniques
(4) STAFF

Primarily intended for the M.A. and Ph.D. graduate student in music.

A survey of music bibliography and research methods.

200B. Bibliography and Research Techniques
(4) STAFF

Primarily intended for the M.A. and Ph.D. graduate student in musicology or theory.

Individual research projects and discussions designed to give the graduate student understanding of the different approaches to historical and systematic musicology.

200C. Bibliography and Research Techniques
(4) HSU

Primarily intended for Ph.D. students in ethnomusicology.

Survey of bibliographic sources and individual research projects in ethnomusicology.

200D. Bibliography and Research Techniques
(4) STAFF

Primarily intended for M.A. and Ph.D. students in theory.

A survey of music bibliography and research methods in theory.

201A-B-C. Notation and Music: Their Historical Interrelation
(4-4-4) PLANCHART, PRIZER

A. Plainchant-early polyphony-modal notation.
B. Black mensural notation from Franco of Cologne to the Ars subtilior.
C. White mensural notation, lute and keyboard tablatures.

202A-B. Seminar in Musicology
(4-4) STAFF

Prerequisites: M.A. or equivalent with consent of instructor.

For advanced students only. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of 202B. May be repeated for credit.

A two-quarter doctoral seminar dealing with selected topics in musicology.

203MT. Musicology—Theory Forum
(1) STAFF

Prerequisites: graduate standing with musicology or theory emphasis.

A monthly meeting of musicology and theory students, faculty, and visiting scholars to present their current research.

204A. Graduate Musicianship I
(1) STAFF

An introduction for graduate students who fail the musicianship placement exam. 204A reviews diatonic ear-training skills and their relation to theory. All graduate students encouraged to enroll; theory/composition students should especially consider 204A as a pedagogical study.

204B. Graduate Musicianship II
(1) STAFF

Prerequsite: Music 204A.

Continues skills of 204A; reviews musicianship skills for modulation. All graduate students encouraged to enroll; theory/composition students should especially consider 204B as a pedagogical study of musicianship.

204C. Graduate Musicianship III
(1) STAFF

Prerequisite: Music 204B.

Continues skills of Music 204A and B; 204C reviews musicianship skills for chromatic harmony. All graduate students welcome; theory and composition students especially encouraged to take 204C as a pedagogical study.

207A-B. Seminar in Orchestration
(4-4) KRAFT

Prerequisite: graduate standing in composition.

A. Instrumental families of the orchestra.
B. Writing for full orchestra.

208. Graduate Composition
(4) KRAFT, KUCHERA-MORIN, FEIGIN

Prerequisite: consent of instructor.

Required for M.A. and Ph.D. in composition. Repeat for credit to the 24 unit requirement (6 quarters).

Individual instruction in composition.

209IA. Direct Digital Synthesis, Processing and Composition
(4) KUCHERA-MORIN

Prerequisites: graduate music majors and graduate non-majors in areas of electrical engineering, computer science, physics and mathematics; consent of instructor.

First quarter of general purpose computing for computer music applications. Topics include: introduction to the UNIX operating system and the vi editor, music synthesis using C-based computer programs, and score input programs.

209IB. Direct Digital Synthesis, Processing and Composition
(4) KUCHERA-MORIN

Prerequisite: Music 209IA.

Second quarter of a 3-quarter sequence course will concentrate on computer music instrument design using C-based music software and exploring applications of frequency modulation, amplitude modulation, additive/subtractive synthesis, digital signal processing, and computer music composition.

209IC. Direct Digital Synthesis, Processing and Composition
(4) KUCHERA-MORIN

Prerequisites: Music 209IA and 209IB.

Third quarter of a 3-quarter sequence course will concentrate on advanced C-based computer programs for digital signal processing and instrument design. Most emphasis this quarter will be music composition.

209LA. Real-Time Digital Music Synthesis, Processing and Composition
(2) KUCHERA-MORIN, ROADS

Prerequisites: graduate music majors and graduate non-majors in areas of electrical engineering, computer science, physics, and math; consent of instructor.

First quarter of a 3-quarter sequence course will concentrate on multi-track recording, mixing, digital signal processing using micro-computers and special purpose dsp equipment.

209LB. Real-Time Digital Music Synthesis, Processing and Composition
(2) KUCHERA-MORIN, ROADS

Prerequisite: Music 209LA.

Second quarter of a 3-quarter sequence course will concentrate on digital synthesis (primarily frequency modulation, simple and complex; but also amplitude modulation and additive synthesis) using micro-computers, digital synthesizers and processing equipment.

209LC. Real-Time Digital Music Synthesis, Processing and Composition
(2) KUCHERA-MORIN, ROADS

Prerequisites: Music 209LA and 209LB.

Third quarter of a 3-quarter sequence course will concentrate on real-time computer music composition with micro-computer and digital synthesis/processing equipment.

209N. Special Topics in Electronic Music
(3) KUCHERA-MORIN, ROADS

Prerequisite: Music 209L.

May be repeated for credit to a maximum of 12 units.

Advanced topics in computer music composition, synthesis, and digital signal processing.

209T. Music and Media
(4) KUCHERA-MORIN

Prerequisite: consent of instructor.

Creative projects in synthesized and acoustic sound. Synchronization with film using SMPTE code. Interdisciplinary collaborations. Previous experience with computer/synthesizer/film desirable.

211A-B-C. Twentieth Century Techniques
(4-4-4) FEIGIN

Prerequisite: passing grade on all theory placement guidance examinations.

A detailed study of twentieth-century compositional techniques. Extensive compositional exercises will be required in whole-tone, pentatonic, quartal, pitch-set, tone-row, process, percussion, and aleatoric composition.

212A-B-C. Canon and Fugue
(4-4-4) FEIGIN

Prerequisite: passing grade on all theory placement guidance examinations.

A detailed study of Bach's canons and fugues, including invertible counterpoint, stretto, triple and quadruple counterpoint, as well as extensions by later and contemporary composers. Extensive compositional exercises required.

219. Applied Instruction
(2) STAFF

Prerequisite: graduate standing. Enrollment by audition.

Not for the performance emphasis in MM or DMA degree programs. May be repeated for credit.

Applied vocal or instrumental instruction for graduate students other than in the performance emphasis discipline of MM and DMA degree programs.

220. Graduate Performance
(3-4) STAFF

Prerequisite: entrance audition for MM or DMA degree program.

May be repeated for credit. (MM Piano Accompanying: 3 units.)

Applied instruction in the performance emphasis discipline (MM Piano Accompanying: instruction in piano) of MM and DMA degree programs.

222X. Practicum in World Music Performance
(1-2) MARCUS

Prerequisites: graduate standing; consent of instructor.

May be repeated for credit.

Individual or group instruction in non-western instruments or vocal styles.

224. Organology
(4) HSU

A systematic study of musical instruments in world cultures involving classification, distribution, acoustical phenomena, and physical typologies. Emphasis on cross-cultural, comparative analysis of solo and ensemble groupings, and the role of musical instruments in the study of acculturation, historical diffusion, and aesthetics.

22S. Field and Laboratory Methods in Ethnomusicology
(4) STAFF

Prerequisite: Music 276.

The development and execution of field research designs. Practical field experience using various techniques of data collection and management, including music recording, photography, filming, questionnaires, and interviewing. The use and interpretation of standard and innovative laboratory methods for processing data, including computer analysis.

226. Notation and Transcription in Ethnomusicology
(4) STAFF

Survey of existing notational systems and exercises in ethnomusicaological transcription, with particular attention to issues related to the visual representation of performed musical sound.

227A-B. Seminar in Ethnomusicology
(4-4) STAFF

Prerequisite: graduate standing in ethnomusicology.

A two-quarter in-progress sequence course with grades issued for both quarters upon completion of Music 227B.

A two-quarter graduate seminar examining special problems, current theories, analytic procedures, and recent innovations in ethnomusicology.

230. Orchestral Conducting
(2) OHYAMA

Prerequisite: enrollment by audition.

May be repeated for credit.

Advanced conducting techniques, score reading and analysis, general rehearsal procedures and repertoire for each type of ensemble: symphony, chamber orchestra and large vocal/instrumental ensembles. (F,W,S)

231. Choral Conducting
(2) GERVAIS

Prerequisite: enrollment by audition.

May be repeated for credit.

Advanced conducting techniques, score reading and analysis, rehearsal techniques and repertoire for vocal and choral ensembles. (F,W,S)

231T. Choral Techniques
(2) GERVAIS

Prerequisites: Music 231 (may be taken concurrently); consent of instructor.

Aspects of choral techniques including: development of concert programs and rehearsal plans, rehearsal procedures, types of vocal ensembles and seating configurations, acoustical considerations, performance and recording procedures, long-term programming and artistic development, social and organizational aspects of vocal ensemble.

233. Score Reading
(2) STAFF

Prerequisite: consent of instructor.

Required for M.M. and D.M.A. degrees in Conducting. May be repeated for credit.

A practical survey of score-reading of selected orchestral scores of the eighteenth, nineteenth, and twentieth centuries including a detailed study of the necessary transcriptions and their relationship to the various clefs.

23SA-B-C-D-E-F. Accompanying Techniques and Repertoire
(2-3) HARLEY

Prerequisite: consent of instructor. (3 units: M.M. Piano Accompaying)

Emphasizes advanced accompaniment techniques, the intensive study of the French and German song cycle, secco recitative, and orchestral score-reading. (A, D:F; B, E:W; C, F:S)

239. Advanced Study of Orchestral Repertoire for Instrumentatlists
(2) OHYAMA

Master class format instruction, preassigned and prepared excerpts of key repertoire encountered in orchestral auditions and orchestral works. Discussions focus on what the audition committee listens for in each excerpt and in each individual's playing.

2S0A-B. Seminar in Music Theory
(4-4) VAN DEN TOORN, HALL

Topics in theoretical research. Content will vary depending on instructor.

A. Analysis and theory of atonal music.

B. Analysis and theory of twelve-tone music.

251A-B-C. Seminar in the History of Theory
(4-4-4) ROTHFARB, VAN DEN TOORN

A. History of early music theory.

B. History of music theory from Rameau to Schenker.

C. A survey of modern speculative theory.

2S2A-B. Seminar in Schenkerian Analysis
(4-4) ROTHFARB

Must be taken in consecutive order.

A. Readings in the theory of Schenkerian analysis. Basic analytical techniques.

B. Advanced reading in Schenkerian theory. Analysis of large forms.

2S2C. Special Topics in Analysis
(4) VAN DEN TOORN

Prerequisites: Music 252A-B.

Modern analytical techniques. Possible topics include set theory, twelve-tone analysis, and theories of perception.

2S7. Composition Forum
(1) STAFF

Prerequisite: Music 208.

May be repeated for credit to a maximum of 16 units.

A forum for the presentation and discussion of new works by students, faculty and guest composers. (F,W,S)

2S8. Opera/Song Repertoire
(2) HARLEY

Prerequisite: consent of instructor.

A detailed study of operatic literature and concert literature (Lieder, melodies, songs, and pieces with instruments). The interpretation of vocal music as a preparation for performance.

2S9. Keyboard Literature
(4) BERKOWITZ

Prerequisite: graduate standing.

A study of the history and literature of keyboard music from the baroque through the twentieth century.

260A-B. Theory and Analysis
(4-4) STAFF

A. Tonal analysis. Analysis of large-scale formal structures and an introduction to modern linear analytical techniques. (F)

B. Analysis of non-tonal and twelve-tone music.

260C. Special Topics in Music Theory
(4) STAFF

May not be repeated for credit.

Advanced study in various aspects of music theory.

260D. Tuning and Temperament
(4) MARCUS

Prerequisite: consent of instructor.

The course surveys a number of tuning systems around the world, including those of ancient Greece, Europe, India, China, the Arab Middle East, Turkey, and Indonesia. The mathematical, aesthetic, and symbolic basis of each system will be considered.

260E. The Arabic System of Melodic Modes (Maqamat)
(3) MARCUS

Prerequisites: graduate standing; consent of instructor.

Examination of the system of melodic modes (maqamat) governing present-day melodic practice in the eastern Arab world. Emphasis given to theoretical issues (quarter tones, tetrachordel structures, and theories of intonation), analysis of pieces in the repertoire, and procedures governing improvisation.

261A-B. Seminar in Music of the Middle Ages
(4-4) PLANCHART

A. Origins, evolution, and structure of Christian liturgy and chant.

B. European polyphony.

262A. Musician and Society
(4) MARCUS

Taking the example of the twentieth-century Egyptian singer Umm Kulthum, special attention is given to musicians' lives and roles as shaped by cultural, social, and political forces, training, economic considerations, and idiosyncratic expression.

262B. Anthropology of Music
(4) STAFF

Examination of music performance traditions as cultural and social phenomena. Special attention given to theoretical formulations of musical anthropology.

262C. Music and Religion
(4) STAFF

An examination of the structural role and symbolic functions of music in religious systems. Case studies will be drawn from diverse world traditions.

262D. Music and Dance
(4) STAFF

Critique of dance ethnology scholarship and applications in analysis of music and movement interrelationships in diverse world performance traditions.

262E. Women and Music in World Cultures
(4) STAFF

Analysis of women's roles in musical traditions as created, ascribed, and appropriated. Discussion of feminist perspectives on musical and social issues.

262F. Cross-Cultural Aesthetics of Music
(4) HSU

A cross-cultural examination of aesthetic values, theories, and practices. Case studies from diverse world traditions will include historical and contemporary perspectives.

262G. Other Issues in Ethnomusicology
(4) STAFF

May be repeated for credit to a maximum of 16 units provided topics are different.

A study of other cultural issues in ethnomusicology. Specific topics will vary by quarter and will be announced in advance by the department.

262X. Umm Kulthum: Her Music, Her Life, Her Times
(4) MARCUS

Prerequisite: consent of instructor.

Analysis of the music, life and times of the predominant Arab singer of the twentieth century. Individual projects may focus on music or text analysis, issues of gender, nationalism, agency, performance, practice, and investigation of related arts (film, novels, etc.).

263A-B. Seminar in Music of the Renaissance
(4-4) PRIZER

A. Sacred music, 1350 to 1600.

B. Secular music, 1400 to 1600.

265A-B. Seminar in Music of the Baroque Period
(4-4) FREEMAN, PRIZER

A. Early baroque.

B. Late baroque.

266A-B. Seminar in Music of the Classical Period
(4-4) FREEMAN

A study of classical style through:

A. Selective forms.

B. Schools and composers.

268A-B. Seminar in Music of the Romantic Period
(4-4) BECKERMAN

A. Study of the origins of romantic music and its development to 1850.

B. Study of late romanticism with special emphasis on music at the turn of the century.

269A-B. Seminar in Music of the Twentieth Century
(4-4) STAFF

A. Style and theory.

B. Special topics.

273. Studies in Music Theory
(4) STAFF

Selected topics in musical analysis.

275. Seminar in Music Criticism
(4) HSU

Investigation of important critical writing in music from the early eighteenth century to the present with study of related works in the field of aesthetics. Analysis of the scope and impact of criticism in the musical life of each period.

276. Studies in Ethnomusicology
(4) STAFF

An introduction to the field of ethnomusicology using theories and methods derived from the social sciences and humanities. Topic areas to include transcription and analysis, musicians, musical instruments, music acculturation, and the function of music in society.

278A-B. Performance Practices
(4-4) FREEMAN, KRAFT

A. A study, through selected works, of historical performance practices of vocal and instrumental music from the Middle Ages through the romantic era. Problems to be treated will include instrumentation, ornamentation, figured bass, rhythm, tempo, articulation, and expression.

B. A study, through selected works, of twentieth-century music with particular attention to new notational concepts and their execution.

279. Studies in Medieval Music
(4) PLANCHART

Introduction to the liturgy and music of the Middle Ages.

280. Ethnomusicology: Theory and Practice
(4) HSU

Study of the evolution of the discipline, its theories, and its methods. Major aspects of ethnomusicological research exemplified in the study of music in Chinese history.

282. Studies in Classical Music
(4) FREEMAN

A study of the classical style from its source in the early eighteenth century to its culmination in the works of Haydn, Mozart, and Beethoven.

283. Studies in Romantic Music
(4) BECKERMAN

The development of music since 1810 and various trends in composition.

284. Studies in Contemporary Music
(4) STAFF

Prerequisite: graduate standing.

A course which traces the stylistic development of music since 1910 and discusses various trends in compositional techniques.

285. History of Film Music
(4) STAFF

Prerequisite: graduate standing in music.

The history of film music from silent film to the present. Topics include style characteristics of major film composers and techniques used for various genres.

286. Studies in American Music
(4) STAFF

Selected studies of music in the United States from its colonial beginnings to the mid-twentieth century. The music will be studied intrinsically as well as viewed from its social and cultural backgrounds.

287. Strauss and Hofmannsthal
(4) HSU

A course in the collaboration between composer and poet. A study of the operas, the correspondence, and related developments in German music in the early 20th century.

288. Ethnomusicology Forum
(2) STAFF

Not open for credit to students who have completed Music 222.

A forum for the presentation of research and performances by students, faculty, and visiting scholars and performers. Students must be currently involved in a research or performance project.

291. Studies in Renaissance Music
(4) PRIZER

Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

292. Studies in Baroque Music
(4) FREEMAN, PRIZER

A selective study of various stylistic and historical aspects of baroque music.

293A. Music Cultures of the World: Latin America and the Caribbean
(4) STAFF

Not open for credit to students who have completed Music 294B.

Cultural and historical study of music in Latin America and the Caribbean. Emphasis on processes of musical acculturation and analysis of representative genres and works.

293B. Music Cultures of the World: African American
(4) STAFF

Not open for credit to students who have completed Music 294A.

Cultural and historical study of African American music in the United States. Topics include musical survivals, processes of acculturation, and syncreticism.

293C. Music Cultures of the World: Africa
(4) FALES

Not open for credit to students who have completed Music 293.

An intensive study of the music traditions of sub-Saharan Africa. Topics include historical background, vocal and instrumental performance traditions, dance, musicians, and analysis of musical structure.

293D. Music Cultures of the World: Asian American
(4) STAFF

Not open for credit to students who have completed Music 270.

A study of the origins, cultural values, functions, and social-economic realities of Asian American music in multicultural and multiethnic America. Special attention given to the creative works by second and third generation Asian Americans.

293E. Music Cultures of the World: China
(4) STAFF

Not open for credit to students who have completed Music 223.

Examination of universal music issues through case studies of Chinese musical works, musicians, theories and practices. Special attention given to interdisciplinary understanding of Chinese music and culture.

293F. Music Cultures of the World: Middle East
(4) MARCUS

Prerequisite: graduate standing.

Not open for credit to students who have completed Music 221.

Arab, Turkish, and Persian music traditions from historical, cultural, and musicological perspectives. Emphasis given to the position of music in Islam, present-day performers, and modal and rhythmic structures.

293G. Music Cultures of the World: India
(4) MARCUS

Prerequisite: graduate standing.

Not open for credit to students who have completed Music 216.

A survey of music traditions of the Indian subcontinent from classical to folk and popular. Emphasis given to the position of music in Hindu philosophy, the role of music in society, musical instruments, and modal and rhythmic structures (raga and tala).

293H. Music Cultures of the World: Korea
(4) STAFF

Examination of representative genres of Korean music and ways Koreans preserve and develop traditional musical culture in the twentieth century. Special attention given to the roles of music in South Korea's rise as a newly industrialized nation.

293I. Music Cultures of the World: Japan
(4) STAFF

Examination of representative Japanese musical genres, masterpieces, and musicians. Special attention given to differences between insider and outsider interpretations and receptions of Japanese music.

293J. Music Cultures of the World: Pacific Islands
(4) STAFF

Not open for credit to students who have completed Music 217.

Examination of themes and issues relevant to Pacific Islands performance traditions including interpretation of sources, musical ramifications of intercultural contacts, and contemporary performance contexts.

293K. Music Cultures of the World: Other Regions
(4) STAFF

May be repeated for credit to a maximum of 16 units provided region studied is different.

A study of the music traditions and genres from other regions of the world. Specific regions studied vary from quarter to quarter and will be announced in advance by the department.

295A-B. Master of Music Performances
(2-2) STAFF

Prerequisite: master of music students only. Recital audition required.

Preparation of:

A. A full-length recital, Conducting: the equivalent of a full-length concert.

B. A major performance: chamber music recital, concerto, major opera/oratorio role, or another full-length recital. Conducting: the equivalent of a chamber ensemble, small ensemble, large ensemble, or mixed concert.

296AA-ZZ. Performance Literature
(4) STAFF

A study of problems in the analysis and performance of major works in selected repertoire.

A. Piano
B. Strings
C. Voice
D. Orchestral
E. Choral
F. Woodwinds
G. Brass

297A-B. Doctor of Musical Arts Performances
(2-2) STAFF

Prerequisite: DMA (including MM Plan 2) students only. Recital audition required.

Preparation of:

A. Chamber music recital, concerto, major opera/oratorio role, or a full-length recital. Conducting: the equivalent of a chamber ensemble, small ensemble, large ensemble, or mixed concert.

B. A full-length recital. Conducting: the equivalent of a full-length concert.

299A-B. Doctor of Musical Arts Seminar: Historical/Theoretical Aspects of Music.
(4-4) STAFF

Prerequisite: Music 200A.

A study of selected repertories, not confined to a single genre or period, from the technical perspective of music theory and history.

501. Directed Teaching in Music
(2-4) STAFF

Prerequisite: appointment as teaching assistant.

Covers development of teaching techniques especially oriented to lower-division instruction. Theoretical aspects covered at beginning of each quarter offered. Practical techniques discussed including weekly meeting with class instructor. Required course for all teaching assistants. (F)

502. Teaching Practicum
(2-4) STAFF

Prerequisite: appointment as teaching assistant or associate.

No unit credit allowed toward advanced degree.

Teaching assistant: leads discussion of topics covered in the lecture. Associate: assumes full responsibility for the teaching of one or more courses. (F,W,S)

594AA-ZZ. Special Topics
(2-4) STAFF

Special seminar in selected problems of current musicology, ethnomusicology, composition, theory, or performance. (F,W,S)

595AA-ZZ. Group Studies
(2-4) STAFF

Critical review of research in selected problems of musicology, ethnomusicology, composition, theory, or performance. (F,W,S)

596AA-ZZ. Directed Reading and Research
(2-4) STAFF

Individual tutorial for research in musicology, ethnomusicology, composition, theory, or performance; instructor will usually be student's major professor. (F,W,S)

597. Individual Study for Master's Comprehensive and Doctoral Qualifying Examinations for Advancement to Candidacy
(1-12) STAFF

Prerequisites: consent of instructor and graduate advisor.

No unit credit allowed toward advanced degree.

598. Preparation for the Master's Degree
(1-12) STAFF

No unit credit allowed toward advanced degree.

Instructor will be chair of student's committee in musicology, ethnomusicology, composition, theory, or performance.

599A. Ph.D. Dissertation Research and Preparation
(1-12) STAFF

No unit credit allowed toward advanced degrees.

Instructor will ordinarily be chair of student's doctoral committee. (F,W,S)

599B. Preparation for DMA Post-Candidacy Recitals
(1-12) STAFF

No unit credit allowed toward advanced degrees.

Preparation of two full-length recitals (conducting: the equivalent of two full-length concerts) required after advancement to candidacy for the DMA degree. Instructor should be student's performance instructor: ordinarily chair of DMA Committee. (F,W,S)

599C. Preparation of DMA Document
(1-12) STAFF

No unit credit allowed toward advanced degrees.

Preparation of the DMA document required after advancement to candidacy for the DMA degree. Instructor should be a member of student's doctoral committee.

Related Courses in Other Departments

Interdisciplinary: 188A-B, 288A-B.

Music Performance Laboratories

LOWER DIVISION

Music courses A36 through A70 may be repeated for credit to a maximum of 6 units with the exception of Music A44 and A42. Enrollment by audition (with the exception of A70's). For lower-division students only.

A34. Wind Ensemble
(1) BAMBACH

Masterworks of the literature for ensembles smaller than orchestral or full band scoring. Although the basic ensembles feature winds, both strings and percussion are utilized. Advanced players only.

A36A-B-C. Chamber Choir
(1-1-1) GERVAIS

Prerequisites: Music A36A for Music A36B; Music A36B for Music A36C.

A select ensemble for singers and instrumentalists, the Chamber Choir prepares musicians for professional ensemble work and offers specialized study in choral literature, techniques, styles and interpretation covering five centuries of choral repertoire.

A37A-B-C. University Singers
(1-1-1) GERVAIS

Prerequisites: Music A37A for Music A37B, Music A37B for Music A37C.

University Choir. (A:F,B:W,C:S)

A38. Opera Workshop
(1) SOKOL

Prerequisite: by audition.

Letter grade required for majors. May be repeated for credit to a maximum of 6 units.

Participation in opera scenes.

A38P. Opera Production
(1) STAFF

Prerequisite: by audition.

Letter grade required for majors. May be repeated for credit to a maximum of 3 units.

Participation in annual opera production.

A39. Guitar Ensemble
(1) HEAD

(F,W,S)

A40. Contemporary Music Ensemble
(1) KRAFT

Reading sessions and preparation for performace of contemporary music. There will be two concerts each quarter. Both the Anacapa Quartet and the Young Artists Quartet will be involved in the concert each quarter.

A41. Piano Ensemble
(1) ASCHE, BERKOWITZ

Prerequisite: by audition.

May be repeated for credit to a maximum of 6 units.

Piano duets (1 piano, 4 hands) and duos (2 pianos) in separate sections. (F,W,S)

A42. Orchestra
(2) SCHINDLER

(F,W,S)

A43. Flute Choir
(1) FELBER

The Flute Choir studies flute literature in depth, perfects technique and interpretation, employs the complete flute family of Bass, Alto flutes, and piccolos. Prepares ensemble for public performances each quarter.

A44. Chamber Music Ensemble
(1) STAFF

(F,W,S)

A45. Brass Quintet
(1) GROSS
Prerequisite: by audition; upper-division standing.
May be repeated for credit to a maximum of 6 units.
Participation in scholarship brass quintet.

A45H. Horn Ensemble
(1) GROSS

A46. Clarinet Choir
(1) BAMBACH

A47S. Jazz Ensemble
(1) NATHAN
Instruction in interpretation and performance of jazz music. Improvization is stressed. Audition is required.

A48. Collegium Musicum: Cappella Cordina
(1) PLANCHART
Prerequisites: enrollment by audition.
For lower-division students.
Performance workshop in Medieval and Renaissance music. Specializes in vocal music, particularly choral.

A48S. Collegium Musicum: Musica Antiqua
(1) PLANCHART
Performance workshop in Medieval and Renaissance music. Specializes in instrumental and solo vocal music. (F,W,S)

A49. Percussion Ensemble
(1) MAGNUSSEN
Rehearsal and performance of standard percussion ensemble literature. Instruction of appropriate playing techniques for standard and exotic percussion instruments.

A70AA-ZZ. Ethnomusicology Performance Ensemble
(1) STAFF
Prerequisite: enrollment by audition with the exception of Music A70J.
Group performance of music from selected world cultures: (F,W,S)
I. Indian Music
J. Beginning Gamelan
K. Advanced Gamelan
M. Middle East Music
V. Gospel Choir

A70N. Middle East Chorus
(1) MARCUS
May be repeated to a maximum of 6 units. Already a long-standing class taught as a subsection of A70M. Will be given concurrently with A170N and A270N.
The chorus learns a variety of songs from Arab, Armenian, Greek, Persian, and Turkish music cultures and performs with the Middle East Ensemble.

UPPER DIVISION

Music courses A134 through A170 may be repeated for credit to a maximum of 9 units with the exception of Music A132A-B-C, A142, and A144. Enrollment by audition, with the exception of A170J. For upper-division only.

A132A-B-C. Young Soloists Ensemble
(1-1-1) GERVAIS
Prerequisites: Music A132A for A132B; Music A132B for A132C; concurrent enrollment in Music A36A-B-C or A136A-B-C; consent of instructor.
May be repeated for credit to a maximum of 12 units, but only 6 unit may be applied toward the major.
A specialized select ensemble for singers as part of a professional apprenticeship program

A134. Wind Ensemble
(1) STAFF
Prerequisite: enrollment by audition.
For upper-division students.
Masterworks of the literature for ensembles smaller than orchestral or full band scoring. Although the basic ensemble feature winds, both strings and percussion are utilized. Advanced players only.

A136A-B-C. Chamber Choir
(1-1-1) GERVAIS
Prerequisites: Music A136A for Music A136B; Music A136B for Music A136C.
A select ensemble for singers and instrumentalists, the Chamber Choir prepares musicians for professional ensemble work and offers specialized study in choral literature, techniques, styles and interpretation covering five centuries of choral repertoire.

A137A-B-C. University Singers
(1-1-1) GERVAIS
Prerequisites: Music A137A for Music A137B; Music A137B for Music A137C.
University Choir. (A:F,B:W,C:S)

A138. Opera Workshop
(1) SOKOL
Prerequisite: by audition.
Letter grade required for majors. May be repeated for credit to a maximum of 9 units.
Participation in opera scenes.

A138P. Opera Production
(1) STAFF
Prerequisite: by audition.
Letter grade required for majors. May be repeated for credit to a maximum of 9 units.
Participation in annual opera production.

A139. Guitar Ensemble
(1) HEAD
(F,W,S)

A140. Contemporary Music Ensemble
(1) KRAFT
Reading sessions and preparation for performance of contemporary music. There will be two concerts each quarter. Both the Anacapa Quartet and the Young Artists Quartet will be involved in the concert each quarter.

A141. Piano Ensemble
(1) ASCHE, BERKOWITZ
Piano duets (1 piano, 4 hands) and duos (2 pianos) in separate sections. (F,W,S)

A142. Orchestra
(2) SCHINDLER
May be repeated for credit to a maximum of 18 units.
(F,W,S)

A143. Flute Choir
(1) FELBER
The Flute Choir studies flute literature in depth, perfects technique and interpretation, employs the complete flute family of Bass, Alto flutes, and piccolos. Prepares ensemble for public performances each quarter.

A144. Chamber Music Ensemble
(2) STAFF
May be repeated for credit to a maximum of 18 units.
(F,W,S)

A145. Brass Quintet
(1) GROSS
Prerequisites: by audition; upper-division standing.
May be repeated for credit to a maximum of 9 units.
Participation in scholarship brass quintet.

A145H. Horn Ensemble
(1) GROSS

A146. Clarinet Choir
(1) BAMBACH

A147S. Jazz Ensemble
(1) NATHAN
Instruction in interpretation and performance of jazz music. Improvization is stressed. Audition is required.

A148. Collegium Musicum: Cappella Cordina
(1) PLANCHART
Performance workshop in Medieval and Renaissance music. Specializes in vocal music, particularly choral.

A148S. Collegium Musicum: Musica Antiqua
(1) PLANCHART
Performance workshop in Medieval and Renaissance music. Specializes in instrumental and solo vocal music. (F,W,S)

A149. Percussion Ensemble
(1) MAGNUSSEN
Rehearsal and performance of standard percussion ensemble literature. Instruction of appropriate playing techniques for standard and exotic percussion instruments.

A170AA-ZZ. Ethnomusicology Performance Ensemble
(1) STAFF
Prerequisite: enrollment by audition with the exception of Music 170J.
Group performance of music from selected world cultures: (F,W,S)
I. Indian Music
J. Beginning Gamelan
K. Advanced Gamelan
M. Middle East Music
V. Gospel Choir

A170N. Middle East Chorus
(1) MARCUS
May be repeated to a maximum of 9 units, but only 6 units may be applied toward the major. Already a long-standing class taught as a subsection of A70M. Will be given concurrently with A70N and A270N.
The chorus learns a variety of songs from Arab, Armenian, Greek, Persian, and Turkish music cultures and performs with the Middle East Ensemble.

GRADUATE COURSES

Music courses A232 to A270 may be repeated for credit to a maximum of 12 units. Enrollment by audition (with the exception of A270J). For graduate students only.

A232A-B-C. Young Soloists Ensemble
(2-2-2) GERVAIS
Prerequisites: Music A232A for Music A232B; Music A232B for Music A232C; consent of instructor.
A specialized select ensemble for singers as part of a professional apprenticeship program, which requires concurrent enrollment in Music 236A-B-C or 231.

A234. Wind Ensemble
(2) BAMBACH
Masterworks of the literature for ensembles smaller than orchestral or full band scoring. Although the basic ensembles feature winds, both strings and percussion are utilized. Advanced players only.

A236A-B-C. Chamber Choir
(2-2-2) GERVAIS
Prerequisite: Music A236A for Music A236B; Music A236B for Music A236C.
A select ensemble for singers and instrumentalists, the Chamber Choir prepares musicians for professional ensemble work and offers specialized study in choral literature, techniques, styles and interpretation covering five centuries of choral repertoire.

A237A-B-C. University Singers
(2-2-2) GERVAIS
Prerequisite: Music A237A for Music A237B; Music A237B for Music A237C.
University Choir.

A238. Opera Workshop
(2) SOKOL
Prerequisite: by audition.
May be repeated for credit to a maximum of 12 units. Letter grade required for majors, optional grading for non-majors.
Participation in opera scenes.

A238P. Opera Production
(2) STAFF
Prerequisite: by audition.
May be repeated for credit to a maximum of 12 units. Letter grade required for majors, optional grading for non-majors.
Participation in annual opera production.

A238P. Opera Production
(2) STAFF
Prerequisite: by audition.
May be repeated for credit to a maximum of 12 units. Letter grade required for majors, optional grading for non-majors.
Participation in opera production.

A239. Guitar Ensemble
(2) HEAD
(F,W,S)

A240. Contemporary Music Ensemble
(2) KRAFT
Reading sessions and preparation for performance of contemporary music. There will be two concerts each quarter. Both the Anacapa Quartet and the Young Artists Quartet will be involved in the concert each quarter.

A241. Piano Ensemble
(2) ASCHE, BERKOWITZ, OBERACKER
Primarily for MM and DMA students in piano.
Piano duets (1 piano, 4 hands) and duos (2 pianos) in separate sections.

A242. Orchestra
(2) SCHINDLER
(F,W,S)

A243. Flute Choir
(2) FELBER

A244. Chamber Music Ensemble
(2) STAFF
(F,W,S)

A245. Brass Quintet
(2) GROSS
Prerequisites: by audition; graduate standing.
May be repeated for credit to a maximum of 12 units.
Partcipation in scholarship brass quintet.

A245H. Horn Ensemble
(2) GROSS

A246. Clarinet Choir
(2) BAMBACH

A247S. Jazz Ensemble
(2) NATHAN

A248. Collegium Musicum: Cappella Cordina
(2) PLANCHART
(F,W,S)

A248S. Collegium Musicum: Musica Antiqua
(2) PLANCHART
Performance workshop in Medieval and Renaissance music. Specializes in instrumental and solo vocal music.

A249. Percussion Ensemble
(2) MAGNUSSEN

A270AA-ZZ. Ethnomusicology Performance Ensemble
(2) STAFF
Prerequisite: enrollment by audition with the exception of Music A270J.
May be repeated for credit.
Group performance of music from selected world cultures:
I. Indian Music
J. Beginning Gamelan
K. Advanced Gamelan
M. Middle East Choir
N. Middle East Chorus: Marcus
V. Gospel Choir

A238P. Opera Production
(2) STAFF
Prerequisite: by audition.
May be repeated for credit to a maximum of 12 units. Letter grade required for majors, optional grading for non-majors.
Participation in annual opera production.

A238P. Opera Production
(2) STAFF
Prerequisite: by audition.
May be repeated for credit to a maximum of 12 units. Letter grade required for majors, optional grading for non-majors.
Participation in opera production.

A239. Guitar Ensemble
(2) HEAD
(F,W,S)

A240. Contemporary Music Ensemble
(2) KRAFT
Reading sessions and preparation for performance of contemporary music. There will be two concerts each quarter. Both the Anacapa Quartet and the Young Artists Quartet will be involved in the concert each quarter.

A241. Piano Ensemble
(2) ASCHE, BERKOWITZ, OBERACKER
Primarily for MM and DMA students in piano.
Piano duets (1 piano, 4 hands) and duos (2 pianos) in separate sections.

A242. Orchestra
(2) SCHINDLER
(F,W,S)

A243. Flute Choir
(2) FELBER

A244. Chamber Music Ensemble
(2) STAFF
(F,W,S)

A245. Brass Quintet
(2) GROSS
Prerequisites: by audition; graduate standing.
May be repeated for credit to a maximum of 12 units.
Partcipation in scholarship brass quintet.

A245H. Horn Ensemble
(2) GROSS

A246. Clarinet Choir
(2) BAMBACH

A247S. Jazz Ensemble
(2) NATHAN

A248. Collegium Musicum: Cappella Cordina
(2) PLANCHART
(F,W,S)

A248S. Collegium Musicum: Musica Antiqua
(2) PLANCHART
Performance workshop in Medieval and Renaissance music. Specializes in instrumental and solo vocal music.

A249. Percussion Ensemble
(2) MAGNUSSEN

A270AA-ZZ. Ethnomusicology Performance Ensemble
(2) STAFF
Prerequisite: enrollment by audition with the exception of Music A270J.
May be repeated for credit.
Group performance of music from selected world cultures:
I. Indian Music
J. Beginning Gamelan
K. Advanced Gamelan
M. Middle East Choir
N. Middle East Chorus: Marcus
V. Gospel Choir

Natural Science Sequence

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Courses in natural science provide a survey of important concepts in the natural sciences and their technical and social implications. A special sequence 1A-B-C sequence is sponsored jointly by the Departments of Chemistry; Ecology, Evolution, and Marine Biology; Molecular, Cellular, and Developmental Biology; and Physics.

The courses in this sequence should be taken in order: A before B, B before C. They are not generally open for credit to students who have completed a college-level course in the biological or physical sciences; exceptions can be made only with consent of the instructor and approval of the provost.

Natural Science Courses

LOWER DIVISION

Courses are not generally open to students who have completed a college level course in the biological or physical sciences. Exceptions can be made with consent of the instructor and approval of the provost.

1A. Contemporary Natural Science—Physics
(4) STAFF
Not open for degree credit for students who have completed Physics 1, 6A, or 10. Lecture, 3 hours; discussion, 1 hour.
Modern description of matter from the scale of the universe to the scale of subatomic particles. Focus on concepts of order, simplicity, and beauty of nature at a fundamental level. Basically descriptive; some familiarity with high-school algebra is useful. (F)

1B. Contemporary Natural Science—Chemistry
(4) STAFF
Prerequisite: Natural Science 1A or Physics 10.
Not open for degree credit to students who have completed Chemistry 25. Lecture, 3 hours; laboratory, 2 hours. Lab fee required.
Introduction to survey of basic chemical principles in the context of selected technological and environmental problems. Topics include: atomic theory, states of matter, the role in weight relations and solutions, bonding in molecules, periodicity and atmospheric pollution rates. (W)

Philosophy

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Faculty

C. Anthony Anderson, Ph.D., UC Los Angeles, Professor (logic, metaphysics, epistemology)

Anthony Brueckner, Ph.D., UC Los Angeles, Professor (epistemology, philosophy of language, metaphysics, Kant)

Wisconsin, Madison, Professor (aesthetics, environmental aesthetics, 18th-century philosophy)

Francis W. Dauer, Ph.D., Harvard University, Professor (epistemology, Hume, philosophical psychology)

Kevin Falvey, Ph.D., University of Minnesota, Assistant Professor (philosophy of mind, philosophy of language)

J. William Forgie, Ph.D., Cornell University, Professor (philosophy of religion, epistemology, Wittgenstein)

Matthew Hanser, Ph.D., UC Los Angeles, Associate Professor (ethics, theory of action, philosophy of mind)

Christopher McMahon, Ph.D., University of Pittsburgh, Professor (moral philosophy, political and social philosophy)

Nathan Salmon, Ph.D., UC Los Angeles, Professor (philosophy of language, metaphysics)

Hubert Schwyzer, Ph.D., UC Berkeley, Professor (Kant, Wittgenstein)

Voula Tsouna, Ph.D., Université de Paris X, Associate Professor (ancient philosophy)

Burleigh T. Wilkins, Ph.D., Princeton University, Professor (philosophy of history, political philosophy, philosophy of law)

Emeriti Faculty

Herbert Fingarette, Ph.D., UC Los Angeles, Professor Emeritus (philosophy of psychology, philosophy of law, Chinese philosophy)

Noel Fleming, D. Phil., Oxford University, Professor Emeritus (philosophy of mind, history of philosophy, aesthetics)

Alexander Sesonske, Ph.D., UC Los Angeles, Professor Emeritus (aesthetics[film], ethics, classical philosophy, philosophy of language)

Affiliated Faculty

Robert Renehan, Ph.D. (Classics)

Philosophy deals with the kinds of questions that engage all reflective people, but which seemingly cannot be dealt with by any of the empirical sciences: Is everything material? Is human behavior determined or is free choice possible? Are there objective standards for deciding what is right and wrong, or is morality merely a subjective matter, a matter of individuals' feelings? Is there a moral obligation to obey the law? Can we justify our claims to know anything? Can we objectively distinguish rational from irrational beliefs? How does language relate to the world?

The study of philosophy encourages rigorous and disciplined habits of mind. Because the major in philosophy emphasizes and enhances analytical skills, it is useful for the large number of careers that require these skills or as general humanistic training at the undergraduate level. Two concentrations within the major accommodate differences in student needs and interests and reflect the two central concerns of philosophy. (1) The core philosophy concentration is designed for students who seek thorough training in philosophy, either as a way of acquiring reasoning and analytical skills and mastering a discipline at the undergraduate level or as preparation for graduate study. (2) The ethics and public policy concentration focuses on moral and legal problems confronting the community and on the responsibilities of various professions. It is intended for a wide variety of students, including particularly those who plan careers in law (where early specialized training is discouraged), the public sector, or medicine (where it would be a useful adjunct).

Students with a bachelor's degree in philosophy who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undeclared students and liberal studies majors should consult with the external undergraduate advisor. There is an advisor for each of the two concentrations, as well as an internal undergraduate advisor who has final authority on such matters as waivers and exceptions. The *Information Sheet for Undergraduate Philosophy Majors* is available at the department office at all times; a list of courses to be offered each quarter, with specific descriptions and required texts, is available shortly before registration time.

Prizes and Awards

Each academic year, one or more Ralph W. Church undergraduate fellowships may be awarded for outstanding scholarship in philosophy. To be eligible for this award a student must be a philosophy major and complete a minimum of 16 upper-division units in philosophy at UCSB. This fellowship is based on academic merit. During spring quarter the department recognizes the outstanding graduating senior by awarding the Harry Girvetz Memorial Prize. This award is included in the commencement program.

Senior Honors Program

Students who meet either of the following requirements may apply to join the philosophy department honors program:

1. Membership in the Letters and Science Honors Program.
2. Completion of at least 12 units of philosophy at UCSB, a philosophy grade point average of 3.5 or better, and an overall grade-point average of 3.3 or better.

Students are urged to apply as early as possible so that a meaningful honors curriculum can be developed at an early stage of their work in the major. Students in the honors program are expected to meet quarterly with the undergraduate advisor to discuss their progress and to plan their subsequent coursework in philosophy; in order to remain in the honors program, students are normally expected to maintain a 3.5 GPA in philosophy.

In order to graduate with distinction in philosophy, the following requirements must be met:

1. Being a member of good standing in the philosophy department honors program for at least the last three quarters prior to graduation.
2. Completion of at least two upper-division philosophy honors courses to be contracted by petition between the honors student and the instructor.
3. Completion of a senior thesis that is judged to be of honors quality by the thesis supervisor.

Undergraduate Program

Bachelor of Arts—Philosophy

The philosophy major requires a total of 48 units, at least 36 of which must be upper-division, distributed in one of the following two concentrations. The specific concentration selected will not be formally acknowledged on the student's official transcript or diploma.

Core Philosophy Concentration

Preparation for the major. Philosophy 3 or 183. Philosophy 183 applies to the 36 upper-division units required.

Recommended preparation for the major: Philosophy 20A-B-C (up to 4 units of this may be substituted for the one course under upper-division Requirement B below but such units will not count toward the 36 upper-division units required).

Upper-division major. At least 36 upper-division units in philosophy, which must include:

A. Three courses from Philosophy 100A, B, C, D, E, 116;
B. Three courses from Philosophy 151, 152, 153, 156, 160, 161, 162, 163, 164, 165, 166A, 166B, 168;
C. Additional philosophy electives to make 36 upper-division units, and a total of 48 for the major. Up to 4 units may be taken from courses in a cognate department, subject to the approval of the undergraduate advisor.

Students preparing for graduate study are encouraged to supplement this program with additional courses in individual historical figures and/or courses from Philosophy 150A-E and 184.

Ethics and Public Policy Concentration

Preparation for the major. Philosophy 3 or 183. Philosophy 183 applies to the 36 upper-division units required.

Recommended preparation for the major: Philosophy 4, 6, or 7.

Upper-division major. At least 36 upper-division units in philosophy, which must include:

A. Philosophy 100A;
B. One course from Philosophy 100B, 100C, 100D, 100E, 116;
C. At least four courses from Philosophy 108, 120, 121, 122, 126, 131, 133, 134, 138, 139, 140, 141, 143, 144, 145, 150A, 188;
D. Additional philosophy electives to make 36 upper-division units and a total of 48 for the major. Up to 8 units may be taken from courses in a cognate department, subject to the approval of the undergraduate advisor.

Minor—Philosophy

The philosophy minor consists of a total of 24 units, at least 20 of which must be upper-division, with courses distributed according to the listing below. Note that if lower-division courses are chosen to fulfill an upper-division requirement, additional upper-division elective courses will be needed. All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in philosophy and those offered by other departments and applied to the minor.

Preparation for the minor. Philosophy 3 or 183 (4 units). Philosophy 183 applies to the 20 upper-division units required.

Upper-division minor. Three courses (12 units) from option A or B:

Option A. Two courses from Philosophy 100A-B-C-D-E, 116, and one course from Philosophy 20A-B-C; 151, 152, 153, 156, 160, 161, 162, 163, 164, 165, 166A, 166B, 168.

Option B. Three courses from Philosophy 100A, 108, 120, 121, 122, 126, 131, 133, 134, 138, 139, 140, 141, 143, 144, 145, 150A, 188.
Elective upper-division philosophy courses to bring the upper division unit total to 20.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must fulfill the university requirements described in the chapter "Graduate Education at UCSB."

Admission

In addition to fulfilling the departmental admission requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." The applicant for admission to the Ph.D. program in philosophy should have completed an undergraduate philosophy major, or a sufficiently close equivalent in the judgment of the graduate admissions committee. Exceptions are occasionally made for outstanding students. A full description of the Ph.D. program is available from the department office.

Master of Arts—Philosophy

The graduate program in philosophy is a Ph.D. program. Only in special circumstances will the department accept students whose aim is limited to earning the M.A. degree. However, provision is made within the Ph.D. program for awarding the M.A. degree when the student has demonstrated the requisite level of competence.

To be awarded the M.A. degree, the student must complete the course requirements listed under the Ph.D. program below, and either write an acceptable M.A. thesis or pass a comprehensive examination. Information about the thesis and examination options is available from the department graduate advisor.

Doctor of Philosophy—Philosophy

Course and seminar requirement. A total of fourteen graduate courses and seminars must be taken (for letter grades, not S/U) and these courses must be distributed as follows:

A. Philosophy 284 (Intermediate Modern Logic);
B. At least five seminars;
C. At least three courses in the history of philosophy;
D. At least three courses chosen from metaphysics, epistemology, the philosophy of mind, and the philosophy of language;
E. At least two courses from ethics, social and political philosophy, and value theory (broadly construed).

Requirements C-E may be satisfied by either graduate seminars or lecture courses; however, a given course may only be used to satisfy one area. A student may be exempted from requirement (A) by passing an examination (given only at the time of entrance into the Ph.D. Program) designed to demonstrate training in logic equivalent to that provided by 283G and 284G. A maximum of one independent study course (Philosophy 596) may count towards the fourteen-course requirement provided that the content of the independent study does not significantly overlap the content of any other course used to satisfy the fourteen-course requirement. Undergraduate courses cannot be used to fulfill the course requirements. Details on the distribution requirements and the deadline for the completion of the course requirements are available from the department.

Qualifying paper. A student must write a successful qualifying paper of at most 35 pages. The paper is to be an original work and should present a philosophical thesis and defend it by argument. A successful qualifying paper is a paper that is judged by a majority of the faculty to demonstrate the ability to write a successful dissertation. The faculty will meet at the end of each term to evaluate the papers submitted that term. To be eligible for consideration in a given term, a paper must be submitted by the end of the ninth week of the term. Any paper written while its author was a student in the graduate program may be submitted as a qualifying paper, and the paper may be submitted at any time after enrolling. However, a student is allowed no more than two submissions. A student whose qualifying paper is passed, and who has satisfied the Graduate Division requirements for the M.A., will be awarded the M.A. degree. Deadlines for the paper and other details of the requirement, such as the possibility of submitting a second paper if the first one is failed, are available from the department.

Oral examination. The final step in advancement to candidacy is successful completion of an oral qualifying examination. Information about the nature and scheduling of the oral exam is available from the department.

Dissertation. Satisfactory completion of a dissertation, including an oral defense, is required.

Philosophy Courses

LOWER DIVISION

1. Short Introduction to Philosophy
(4) STAFF
An introductory course in western philosophy. (F,W,S)

3. Critical Thinking
(4) STAFF
Practical reasoning, argumentation, and the analysis of language as instruments of sound thinking in everyday life. (F,W,S)

4. Introduction to Ethics
(4) STAFF
An examination, at an introductory level, of such ethical issues as: why be moral, moral relativism, the nature of virtues and vices; and possibly consideration of practical ethical problems such as abortion or war.

6. Business Ethics
(4) STAFF
The course will study important ethical problems that arise in modern business practice in light of traditional theories in moral and political philosophy. Issues such as codes of conduct for business, preferential treatment of minorities, responsibility to the environment, and the morality of strikes by public service personnel will be studied in light of such theories as utilitarian and deontological moral theories, Classical, Liberalism, and Marxism.

7. Biomedical Ethics
(4) STAFF
An examination of philosophical thinking about moral issues raised by the practice of medicine. Traditional ethical theories and problems will serve as background to, and in turn be illuminated by, such issues as informed consent, paternalism, abortion, euthanasia, and genetic engineering.

20A-B-C. History of Philosophy
(4-4-4) STAFF
A. From Thales to Aristotle.
B. From Medievalists to Rationalists.
C. Empiricists to Kant.

UPPER DIVISION

With the exception of Philosophy 130, and 183, at least one prior course in philosophy or consent of instructor is required for upper-division courses. See individual course prerequisites for more specific information.

100A. Ethics
(4) STAFF
Prerequisite: One prior course in philosophy; or Philosophy 3 (may be taken concurrently).
An examination of the fundamental concepts, theories, and problems of moral or political philosophy.

100B. Theory of Knowledge
(4) STAFF
Prerequisite: One prior course in philosophy; or Philosophy 3 (may be taken concurrently).
An examination of the fundamental concepts, theories, and problems in one of the five major areas of western philosophy.

100C. Philosophy of Language
(4) STAFF
Prerequisite: One prior course in philosophy; or Philosophy 3 (may be taken concurrently).

An examination of the fundamental concepts, theories, and problems in one of the five major areas of western philosophy and philosophical theories of linguistic meaning, such as those of Locke, J.S. Mill, Frege, Russell, Wittgenstein, logical positivism, Quine, Grice, and/or Kripke.

100D. Philosophy of Mind
(4) STAFF
Prerequisite: One prior course in philosophy; or Philosophy 3 (may be taken concurrently).

An examination of the fundamental concepts, theories, and problems in one of the five major areas of western philosophy.

100E. Metaphysics
(4) STAFF
Prerequisite: One prior course in philosophy; or Philosophy 3 (may be taken concurrently).

An examination of the fundamental concepts, theories, and problems in one of the five major areas of western philosophy.

102A-B. Applied Analytical Reasoning
(4-4) DAUER, FORGIE
Prerequisite: Philosophy 3.

A. The development of skills in analyzing material drawn from a variety of philosophical and nonphilosophical concerns. Emphasis will be placed on disambiguating hidden ambiguities, making relevant distinctions, abstracting the central issues, and the analysis of increasingly complex arguments.

B. The study and application of specialized forms of reasoning such as legal reasoning, reasoning concerning means and ends, reasoning involved in problem-solving situations, and scientific and inductive reasoning.

108. Philosophy of Social Sciences
(4) WILKINS, FALVEY
Prerequisite: One prior course from Philosophy 100B-C-D-E; or two prior upper-division philosophy courses.

Questions and problems in the methodology of the social sciences, including whether the social sciences have distinctive methods of explanation; models of rationality employed in the social sciences; and whether the social sciences can or should be value-neutral.

112. Philosophy of Religion
(4) FORGIE, ANDERSON
Prerequisite: One prior course in philosophy.

A study of some of the following topics: religious language, the existence and nature of God, the problem of evil, religious experience, religion and morality, the rationality of religious belief.

116. Meaning and Reference
(4) BREUCKNER, SALMON
Prerequisite: Philosophy 183 (may be taken concurrently).

An examination of the classical theories of meaning and reference: John Stuart Mill, Gottlob Frege, Bertrand Russell, and the theory of direct reference. Investigation of solutions to the classical puzzles of meaning and reference.

120. Advanced Topics in Biomedical Ethics
(4) WILKINS

Topics will include: abortion, euthanasia, medical experimentation, genetic engineering, and debts to future generations.

121. Political Philosophy
(4) WILKINS
Prerequisite: Philosophy 3 and 4; or Philosophy 100A; upper-division standing; major in philosophy, law & society, or political science.

Analysis of fundamental political conceptions; the state, sovereignty, political obligation, natural rights, natural law, etc.

122. Theories of Justice
(4) STAFF
Prerequisite: Philosophy 3 and 4; or Philosophy 100A; upper-division standing; major in philosophy, law & society, or political science.

An examination, in detail, of one or more influential philosophical theories of justice.

124. Philosophy of Science
(4) WILKINS, ANDERSON
Prerequisite: a prior course in philosophy.
Recommended preparation: a strong background in science.

Analysis of the interrelated functions of scientific theories, models, laws, experiments, and observational procedures in relation to the goals of explanation, prediction, control, and understanding. Problems of induction and the logic of confirmation.

126. Social Philosophy
(4) MCMAHON
Prerequisite: Philosophy 100A; or two prior courses in philosophy.

This course will examine moral problems associated with economic activity: for example, economic justice and the moral basis of property rights.

129. Philosophy of International Relations
(4) STAFF
Prerequisite: upper-division standing; a major in philosophy, law & society, political science, or global and international studies.

Study of philosophical problems in international relations.

130. Freedom and Determinism
(4) WILKINS
For nonmajors and majors.

This course concerns the problem of whether human action is free or determined and its implications for whether we are morally responsible for our acts. Readings in authors such as St. Augustine, Jonathan Edwards, Kant, William James, Marx, Freud, and Kenny.

131. Advanced Topics in Applied Ethics
(4) HANSER, WILKINS
Prerequisite: Philosophy 100A; or two prior courses in philosophy.

133. History of Political Thought
(4) WILKINS
Prerequisites: two prior courses in philosophy; upper-division standing; major in philosophy, law & society, or political science.

A study of one or more important figures from the history of political thought.

134. Moral Psychology
(4) STAFF
Prerequisites: Philosophy 4 or 100A; and Philosophy 100B or 100C or 100D or 100E.

An examination of the nature of desires, emotions, the imagination and other aspects of human psychology, and of the ways these bear on the moral evaluation of people and actions.

135. Contemporary Philosophy
(4) STAFF
Prerequisite: Philosophy 100B or 100D or 100E.

136. Aesthetics
(4) CRAWFORD
Prerequisite: one prior course in philosophy.

Analysis of the aesthetic experience, the aesthetic object, the creative act, and art criticism.

137. Aesthetic Theory
(4) SCHWYZER
Prerequisite: one prior course in philosophy.

A study of some major works in the philosophy of art from Plato to the present, with emphasis on the development and analysis of the basic concepts employed in criticism of the arts.

138. Normative Ethics
(4) MCMAHON
Prerequisite: Philosophy 100A; or two prior courses in philosophy.
May be repeated for credit to a maximum of 8 units.

An examination of what makes actions morally right or wrong and people morally good or bad.

139. Meta-ethics
(4) HANSER
Prerequisite: Philosophy 100A; or two prior courses in philosophy.
May be repeated for credit to a maximum of 8 units.

An examination of problems concerning the meaning and justification of moral judgments.

140. History of Ethics: Ancient
(4) STAFF
Prerequisite: Philosophy 100A; or two prior courses in philosophy.
May be repeated for credit to a maximum of 8 units.

A study of one or more important moral philosophers from the ancient period.

141. History of Ethics: Modern
(4) MCMAHON
Prerequisite: Philosophy 100A; or two prior courses in philosophy.
May be repeated for credit to a maximum of 8 units.

A study of one or more important moral philosophers from the modern period (roughly the sixteenth century to the present).

142. Advanced Topics in Philosophy of Religion
(4) FORGIE
Prerequisites: Philosophy 112, or two prior courses in philosophy; and one additional course in philosophy.
May be repeated to a maximum of 8 units with the consent of the instructor.

Advanced topics in the philosophy of religion. Specific subject matter is selected by the instructor and descriptions are available in the department office before each quarter.

143. Philosophy of Law
(4) WILKINS
Prerequisites: Philosophy 3; and; Philosophy 4 or 100A; upper-division standing; a major in philosophy, law & society, or political science.

An introduction to some of the main issues generated by the philosophical question, "What is Law?" (1) In what sense is conduct made obligatory by the existence of law? (2) What, if any, is the relationship between law and morals? (3) What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

144. Advanced Topics in the Philosophy of Law
(4) WILKINS
Prerequisites: Philosophy 3; and; Philosophy 4 or 100A; upper-division standing; a major in philosophy, law & society, or political science.

145. Punishment and Responsibility
(4) WILKINS
Prerequisites: Philosophy 3; and; Philosophy 4 or 100A; upper-division standing; a major in philosophy, law & society, or political science.

An examination of some of the philosophical problems of punishment and responsibility: the rationale of punishment and the legal doctrine of *mens rea*; the analysis of conditions of responsibility, relations between punishment, responsibility, retribution, guilt, shame, etc.

149. Action Theory
(4) HANSER
Prerequisites: one prior course from Philosophy 100B-C-D-E; or, two prior courses in philosophy.
May be repeated for credit to a maximum of 8 units.

An examination of philosophical topics connected with human action, e.g., the role of intentions and desires in the explanation and justification of action and the nature of practical reason.

150A. Advanced Topics in Ethical Theory
(4) MCMAHON, HANSER
Prerequisite: Philosophy 100A; or two prior courses in philosophy.
May be repeated up to 12 units with consent of instructor.

150B. Advanced Topics in Theory of Knowledge
(4) DAUER, BRUECKNER
Prerequisite: Philosophy 100B; or two prior courses from Philosophy 100A-C-D-E.

May be repeated up to 8 units with consent of instructor.

150C. Advanced Topics in Philosophy of Language
(4) SALMON
Prerequisites: Philosophy 116 and 183.

May be repeated for credit to a maximum of 8 units with consent of instructor.

Specific subject matter selected by the instructor. Descriptions available in the department office before each quarter.

150D. Advanced Topics in Philosophy of Mind
(4) FALVEY, SCHWYZER
Prerequisite: Philosophy 100D; or two prior courses from Philosophy 100A-B-C-E.

May be repeated up to 8 units with consent of instructor.

150E. Advanced Topics in Metaphysics
(4) FORGIE, SALMON
Prerequisite: Philosophy 100E; or two prior courses from Philosophy 100A-B-C-D.

May be repeated up to 8 units with consent of instructor.

151. Pre-Socratics
(4) STAFF
Prerequisite: Philosophy 100B or 100D or 100E.

152. Plato
(4) STAFF
Prerequisites: two prior courses from Philosophy 100B-D-E.

The philosophy of Plato.

153. Aristotle
(4) STAFF
Prerequisites: two prior courses from Philosophy 100B-D-E.

The philosophy of Aristotle.

156. Hellenistic Philosophy
(4) STAFF
Prerequisites: two prior courses from Philosophy 100B-D-E.

An examination of the thought of major Greek philosophers of the Hellenistic period.

160. Descartes
(4) SCHWYZER, FORGIE
Prerequisite: Philosophy 20B or 100B or 100D or 100E.

161. Spinoza
(4) ANDERSON
Prerequisite: Philosophy 100B or 100D or 100E.

162. Leibniz
(4) STAFF
Prerequisite: Philosophy 100B or 100D or 100E.

163. Locke
(4) SCHWYZER
Prerequisite: Philosophy 20B or 100B or 100D or 100E.

164. Berkeley
(4) STAFF
Prerequisite: Philosophy 20B or 100B or 100D or 100E.

165. Hume
(4) DAUER
Prerequisites: two prior courses from Philosophy 100B-C-D-E; or, Philosophy 20C plus two upper-division courses in philosophy.

The philosophy of David Hume.

166A-B. Kant
(4-4) SCHWYZER, BRUECKNER
Prerequisites: two prior courses from Philosophy 20B, 100B-D-E, or 160.

An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason*.

168. Nietzsche
(4) STAFF
Prerequisite: Philosophy 100B or 100D or 100E.

The philosophy of Nietzsche.

170. Wittgenstein
(4) SCHWYZER
Prerequisite: Philosophy 100B or 100C or 100D or 100E.

172. Heidegger
(4) STAFF
Prerequisite: Philosophy 100B or 100C or 100D or 100E.

173. Frege
(4) ANDERSON
Prerequisite: Philosophy 100B or 100C or 100D or 100E.

An examination of the work of the German philosopher and logician, Gottlob Frege.

174. Early Analytic Philosophy
(4) HANSER, SALMON
Prerequisite: Philosophy 100B or 100C or 100D or 100E.

May be repeated for credit to a maximum of 8 units.

A study of one or more major philosophers from the early stages of the analytic tradition (e.g., Frege, Moore, Russell, Wittgenstein, and the Logical Positivists).

175. Other Philosophers
(4) STAFF
Prerequisite: Philosophy 100B or 100C or 100D or 100E.

Course content will vary. Philosophers not taught in a regular course offering—such philosophers as Plotinus, Bacon, Hobbes, Pascal, Reid, Schopenhauer, Bradley—yet whose work is intrinsically important will be studied. Students may check with the department office for more detailed information before enrolling.

180. Philosophical Psychology
(4) HANSER
Prerequisites: one prior upper-division course in philosophy; and one additional course in philosophy.

May be repeated for credit to a maximum of 8 units.

An examination of some of the concepts of the mind, such as those of desire, intention, action, perception, sensation, and the unconscious.

183. Beginning Modern Logic
(4) SALMON
An introduction to the concepts and methods of modern symbolic logic. Emphasis is placed on problems of translating English expressions into logical symbols and on the development of skills in using the formal proof procedures of sentential and predicate logic.

184. Intermediate Modern Logic
(4) SALMON
Prerequisite: Philosophy 183.

Further application and development of the predicate calculus, including the calculi of identity and description. An introduction to the metalogical questions of completeness, consistency, and decidability.

185. Advanced Modern Logic
(4) SALMON, ANDERSON
Prerequisite: Philosophy 184 or Mathematics 109A.

Topics from the theory of formal systems, set theory, recursive function theory, and automata theory.

186. Philosophical Logic
(4) SALMON, ANDERSON
Prerequisite: Philosophy 184.

May be repeated for credit to a maximum of 8 units.

Topics in logical theory and the philosophy of logic: intensional logics and other non-standard logics (such as modal logic); discussion of results of modern logic and their philosophical implications.

187. Philosophy of Mathematics
(4) ANDERSON
Prerequisite: Philosophy 183.

Logistic, formalist, and intuitionist views of the nature of mathematics. Epistemological problems of applied mathematics.

188. Theory of Value
(4) WILKINS, HANSER
Prerequisite: one prior course in philosophy.

192. Internship in Philosophy
(1-12) STAFF
Prerequisite: upper-division standing in philosophy; consent of instructor and department.

Students must have a 3.0 overall grade-point average. May be repeated for credit to a maximum of 12 units but only 4 units may count toward the major.

Practical experience and application of analytical and ethical skills learned in philosophy as interns with agencies and business. Periodic and final reports required under faculty direction.

196. Senior Honors Seminar
(4) STAFF
Prerequisite: senior philosophy majors by invitation of instructor.

A discussion course centered around a single topic or problem to be announced in advance by the instructor. (F)

197A-B. Senior Honors Thesis
(2-2) STAFF
Prerequisites: senior philosophy majors, by consent of instructor, and departmental approval.

A continuous two-quarter research and writing tutorial designed for senior honors majors. The first term will be spent mainly in selecting and researching a topic for the thesis. The second term will be spent mainly in the writing of the thesis. (W,S)

197P. Senior Project for Majors with Ethics and Public Policy Emphasis
(2-4) STAFF
Prerequisites: upper-division standing in philosophy and consent of department.

May be repeated up to 8 units with consent of instructor.

A research and writing tutorial in some topic relevant to issues in ethics and public policy. A written proposal of the project must be approved by the undergraduate advisor and the instructor.

199. Independent Studies in Philosophy
(1-5) STAFF
Prerequisites: upper-division standing; completion of two upper-division courses in philosophy.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Philosophy 199 may be repeated to a maximum of 12 units. No more than 12 units may be applied to the major.

A written statement of the proposed program of study must be presented to the instructor for his or her approval before the student signs up for the course. (F,W,S)

199RA. Independent Research Assistant
(1-5) STAFF
Prerequisite: upper-division standing.

Students must enroll under instructor number and have a minimum 3.0 grade-point average for the preceding three quarters. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Philosophy 199RA may be repeated for credit to a maximum of 5 units

Course work shall consist of faculty supervised research.

GRADUATE COURSES

Graduate standing is a prerequisite for all graduate courses. All graduate seminars (with the exception of Philosophy 200) may be repeated for credit with consent of instructor, and may be taken for 1 to 4 units of credit as determined by consultation with the instructor. Specific topics for seminars will be available at the department office at the time registration counseling begins.

200. First-Year Graduate Seminar
(4) STAFF
Prerequisite: enrollment limited to first-year graduate students.
The course is designed to introduce new graduate students to graduate-level work. Topics will depend on the interests of the students and the instructor.

208G. Philosophy of the Social Sciences
(4) WILKINS, FALVEY
Questions and problems in the methodology of the social sciences, including whether the social sciences have distinctive methods of explanation; models of rationality employed in the social sciences; and whether the social sciences can or should be value-neutral.

212G. Philosophy of Religion
(4) FORGIE

216G. Meaning and Reference
(4) SALMON
An examination of the classical theories of meaning and reference: John Stuart Mill, Gottlob Frege, Bertrand Russell, and the theory of direct reference. Solutions to the classical puzzles of meaning and reference are investigated.

220G. Topics in Bio-medical Ethics
(4) WILKINS
A study at the graduate level of selected topics in bio-medical ethics; topics will include (but not be limited to) abortion, euthanasia, medical experimentation, genetic engineering, and debts to future generations.

221G. Political Philosophy
(4) WILKINS

222G. Theories of Justice
(4) STAFF
A study at the graduate level of an examination, in detail, of one or more influential philosophical theories of justice.

224G. Philosophy of Science
(4) WILKINS

226G. Social Philosophy
(4) MCMAHON
A study at the graduate level of moral problems associated with economic activity, for example, economic justice and the moral basis of property rights.

229G. Philosophy of International Relations
(4) WILKINS
Prerequisite: graduate standing.
The study of philosophical problems in international relations.

230G. Freedom and Determinism
(4) WILKINS
A study at the graduate level of the problem of whether human action is free or determined.

231G. Advanced Topics in Applied Ethics
(4) HANSER, WILKINS

233G. History of Political Thought
(4) WILKINS
A study of one or more important figures from the history of political thought.

234G. Moral Psychology
(4) FALVEY
An examination of the nature of desires, emotions, the imagination, and other aspects of human psychology, and of the ways these bear on the moral evaluation of people and actions.

235G. Contemporary Philosophy
(4) SALMON
A study at the graduate level of selected topics in contemporary philosophy.

236G. Aesthetics
(4) SCHWYZER
A study at the graduate level of the aesthetic experience, the aesthetic object, the creative act and art criticism.

237G. Aesthetic Theory
(4) SCHWYZER
A study at the graduate level of the development and analysis of the basic concepts employed in criticism of the arts.

238G. Normative Ethics
(4) MCMAHON
An examination of what makes actions morally right or wrong and people morally good or bad.

239G. Meta-ethics
(4) HANSER
An examination of problems concerning the meaning and justification of moral judgments.

240G. History of Ethics: Ancient
(4) STAFF
A study of one or more important moral philosophers from the ancient period.

241G. History of Ethics: Modern
(4) MCMAHON
A study of one or more important moral philosophers from the modern period (roughly the sixteenth century to the present).

242G. Topics in the Philosophy of Religion
(4) FORGIE
A study at the graduate level of topics in the philosophy of religion.

243G. Philosophy of Law
(4) WILKINS
An introduction to some of the main issues generated by the philosophical questions, "What is Law?" (1) In what sense is conduct made obligatory by the existence of law? (2) What, if any, is the relationship between law and morals? (3) What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

244G. Advanced Topics in the Philosophy of Law
(4) WILKINS

245G. Punishment and Responsibility
(4) WILKINS
An examination of some of the philosophical problems of punishment and responsibility: the rationale of punishment and the legal doctrine of *mens rea*; the analysis of conditions of responsibility, relations between punishment, responsibility, retribution, guilt, shame, etc.

249G. Action Theory
(4) HANSER
An examination of philosophical topics connected with human action, e.g., the role of intentions and desires in the explanation and justification of action and the nature of practical reason.

250A. Topics in Ethical Theory
(4) MCMAHON, HANSER

250B. Topics in Theory of Knowledge
(4) DAUER, BRUECKNER

250C. Topics in Philosophy of Language
(4) SALMON, FALVEY

250D. Topics in Philosophy of Mind
(4) FORGIE, FALVEY

250E. Topics in Metaphysics
(4) FORGIE, SALMON

251G. Pre-Socratics
(4) STAFF

252G. Plato
(4) STAFF

253G. Aristotle
(4) STAFF

256G. Hellenistic Philosophy
(4) STAFF

260G. Descartes
(4) SCHWYZER

261G. Spinoza
(4) ANDERSON

262G. Leibniz
(4) ANDERSON

263G. Locke
(4) SCHWYZER

264G. Berkeley
(4) DAUER

265G. Hume
(4) DAUER

266A-B. Kant
(4) SCHWYZER, BRUECKNER

268G. Nietzsche
(4) STAFF

270G. Wittgenstein
(4) SCHWYZER, FORGIE

272G. Heidegger
(4) STAFF

273G. Frege
(4) ANDERSON
An examination of the work of the German philosopher and logician, Gottlob Frege.

274G. Early Analytic Philosophy
(4) HANSER, SALMON
A study of one or more major philosophers from the early stages of the analytic tradition (e.g. Frege, Moore, Russell, Wittgenstein, and the Logical Positivists.)

275G. Other Philosophers
(4) STAFF
Course content will vary. Philosophers not taught in a regular course or seminar, whose work is considered important, will be studied at the graduate level.

280G. Philosophical Psychology
(4) DAUER
Prerequisite: graduate standing.
A study at the graduate level of selected topics in philosophical psychology.

283G. Beginning Symbolic Logic
(4) DAUER, SALMON
An introduction to symbolic logic at the graduate level.

284G. Intermediate Symbolic Logic
(4) DAUER, SALMON
A continuation of the study of symbolic logic.

285G. Advanced Symbolic Logic
(4) DAUER, SALMON
An advanced study of symbolic logic.

286G. Philosophical Logic
(4) SALMON
Prerequisites: Philosophy 183 and 184.
Topics in logical theory and the philosophy of logic: intensional logic and other non-standard logics (such as modal logic); discussion of results of modern logic and their philosophical implications.

287G. Philosophy of Mathematics
(4) DAUER

288G. Theory of Value
(4) WILKINS

296A. Seminar in Ethics
(1-4) STAFF
Prerequisite: graduate standing.

296B. Seminar in Epistemology
(1-4) STAFF
Prerequisite: graduate standing.

296C. Seminar in the Philosophy of Language
(1-4) STAFF
Prerequisite: graduate standing.

296D. Seminar in the Philosophy of Mind
(1-4) STAFF
Prerequisite: graduate standing.

296E. Seminar in Metaphysics
(1-4) STAFF
Prerequisite: graduate standing.

297A. Seminar in the History of Philosophy
(1-4) STAFF
Prerequisite: graduate standing.

297B. Seminar on Contemporary Figures in Philosophy
(1-4) STAFF
Prerequisite: graduate standing.

298A. Seminar in Aesthetics
(1-4) STAFF
Prerequisite: graduate standing.

298B. Seminar on Problems in Legal and Political Philosophy
(1-4) STAFF
Prerequisite: graduate standing.

299A. Seminar in the Philosophy of Logic
(1-4) STAFF
Prerequisite: graduate standing.

500. Apprentice Teaching in Philosophy
(2-4) STAFF
Prerequisite: teaching assistantship in philosophy.
No unit credit allowed toward degree.
A teaching practicum involving the study and development of effective teaching techniques in philosophy. Each student will be responsible for and teach a class section in an undergraduate course in philosophy. One meeting per week with instructor and one or more discussion section meetings, and attendance in the lecture of the assigned course are required.

501. Teaching Assistant Training
(2) STAFF
Prerequisite: teaching assistant in philosophy.
No unit credit allowed toward degree.
Instructional training. Orientation in professional conduct and responsibilities; observation of student's teaching (in the form of faculty visits or videotaping) and follow-up conferences; discussion of teaching evaluations and workshops on pedagogical problems.

505. Philosophical English for Foreign Students
(1-6) STAFF
Prerequisites: foreign graduate student in philosophy. Either (a) passing English Language Placement Examination at a level where English as a Second Language classes are not required; or (b) successful completion of ESL required classes; or (c) concurrent enrollment in required ESL classes.
This course is designed to familiarize foreign graduate students with the style and terminology of the English language as used in philosophical classics and contemporary journal articles and to write papers on them. The course will have a philosophical as well as a language training component.

594. Special Topics
(1-4) STAFF
Prerequisite: consent of instructor.
Special seminar on research subjects of current interest.

596. Directed Reading and Research
(1-12) STAFF
Prerequisites: graduate student in philosophy; consent of instructor.
A written proposal must be approved by the instructor and the department chair.

597. Individual Study for Master's and/or Ph.D. Examinations for Advancement to Candidacy
(1-12) STAFF
No unit credit allowed toward degree.
Individual preparation for the doctoral qualifying examination.

598. Master's Thesis Research and Preparation
(1-12) STAFF
No unit credit allowed toward degree.
This course is reserved for research and writing of the master's thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) STAFF

Physical Activities

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Faculty

Mircea Badulescu, M.A., Institute of Physical Education and Sport, Bucharest, Romania, Lecturer (intercollegiate gymnastics)

Duncan Blair, M.Ed., University of Missouri, Lecturer (basketball, swimming, tennis, weight training)

Robert Brontsema, M.A., Azusa Pacific University, Azusa, Lecturer (baseball, softball, weight training)

Susan Ceriale, M.A., California State University, San Diego, Lecturer (first aid/CPR, exercise physiology, wellness/fitness administration)

Judith E. Dale, M.A., UC Santa Barbara, Lecturer (recreation administration, officiating, sports sociology)

Alfred J. Ferrer, M.A., California State University, Chico, Lecturer (athletic administration, baseball, weight training, sport management, athletic coaching minor)

Mark S. French, M.A., University of the Pacific, Lecturer (basketball, weight training)

Art R. Gilbert, M.A., UC Santa Barbara, Lecturer (nutrition, exercise physiology, wellness and fitness administration, exercise and health science minor)

Kathleen M. Gregory, B.A., California State University, Los Angeles, Lecturer (badminton, volleyball)

Wayne N. Horodowich, M.S., University of Oregon, Lecturer (leadership training/team building, adventure program administration)

Bobbi L. Houghton, M.S., UC Los Angeles, Lecturer (first aid/CPR, lifeguarding, Water Safety Instructor)

Peter A. Kirkwood, B.A., California State University, Bakersfield, Lecturer (tennis, weight training)

Paul K. Lee, B.A., California State University, Fresno, Lecturer (recreational sports administration)

Debra Miles-Dutton, B.A., UC Santa Barbara, Lecturer (aqua aerobics, aquatics administration)

Lex J. Murray, M.A., University of Arizona, Lecturer (golf, physical fitness, sport psychology)

Richard C. Powell, M.S., California State University, San Diego, Lecturer (first aid/CPR, substance abuse, tennis, triathlon)

Kenneth A. Preston, M.S., California Polytechnic University, San Luis Obispo, Lecturer (golf, tennis, volleyball)

James A. Romeo, M.Ed., Springfield College, Lecturer (applied kinesiology, medical aspects, sport management minor)

Jon A. Spaventa, M.Ed., Springfield College, Lecturer (administration, movement education, sport psychology)

Kymberly Williams-Evans, M.A., UC Santa Barbara, Lecturer (fitness instruction minor)

Gregg Wilson, M.A., UC Berkeley, Lecturer (aquatics, swimming)

Emeriti Faculty

Arthur J. Aldritt, M.A., UC Berkeley, Supervisor Emeritus

Marian Anderson, Supervisor Emerita

Newell D. Breyfogle, M.A., University of Iowa, Supervisor Emeritus

Willard M. Hammer, Ed.D., University of Oregon, Supervisor Emeritus

Mayville S. Kelliher, Ed.D., University of Oregon, Supervisor Emeritus

F. Patricia Stock, M.S., University of Oregon, Supervisor Emerita

The Department of Physical Activities offers a program of basic instruction consisting of 1/2 unit courses and a physical education minor with emphases in athletic coaching, exercise and health science, fitness instruction and sport management.

Basic instruction ("1-" physical activities courses) is offered at the elementary, intermediate and advanced levels. Courses range in scope from a fitness related emphasis–aerobics, jogging, swimming and weight training–to individual and team sports such as basketball, golf, tennis and volleyball. Courses in the "1-" series with the "Intercollegiate" designation in the title may be repeated up to 12 times for a total of 6 units. No more than 6 units of "1-" courses may be counted toward degree requirements.

A physical examination performed by a private physician is recommended for any student intending to enroll in physical activities courses.

Fines are imposed by the department for failure to return equipment or clothing on or before the date posted for such return at the end of each quarter, and for failure to close out lockers at the end of each quarter.

The minor in physical education features four individual program tracks each consisting of a varying amount of upper-division coursework. The program prepares students for advanced studies in related disciplines as well as career opportunities in the expanding fields of athletic coaching, exercise and health science, fitness instruction and sport management.

Students interested in a physical education

minor should consult the appropriate advisor by contacting the Physical Activities Department Office.

Undergraduate Program

Minor—Physical Education—Athletic Coaching

The athletic coaching minor is designed for students who wish to coach at the elementary, secondary, collegiate, or club level. The curriculum includes the scientific, social, and technical aspects of the profession. The minor offers students a diversity of coaching opportunities and options.

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in physical activities and those offered by other departments and applied to the minor.

Preparation for the minor. EEMB 25 and EEMB 25L or MCDB 25 and MCDB 25L.

Upper-division minor. Twenty-eight units, distributed as follows: Advanced Physical Activities 101, 130, 131, 149, 150, 180; one course from the Advanced Physical Activities 170 series (3 units).

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Physical Education—Fitness Instruction

The fitness instruction minor is for students who wish to become personal trainers or group fitness instructors. This comprehensive program includes theoretical, training, and practical components. Students elect to pursue either a personal training emphasis, a group instruction emphasis, or both. Students completing the minor will be prepared to conduct exercise sessions in a range of health and fitness settings working with individual clients or in a group.

All courses to be applied to the minor must be completed on a letter-grade basis. Students must complete all core classes and courses in the chosen emphasis. This stipulation includes courses for the minor offered in both physical activities and other departments. Upper-division units total 21 for the group emphasis and 24 for the personal training emphasis.

Preparation for the minor. Advanced Physical Activities 3, MCDB 25, and MCDB 25L.

Upper-division minor. Twenty-four units, distributed among the following: Advanced Physical Activities 101, 101L, 131, 149, 150, 175A, 176, 181, 184.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Physical Education—Exercise and Health Science

The exercise and health science minor explores the physiological changes produced by exercise and the ways in which they contribute to health and the reduction of disease and stress. This minor is for individuals interested in corporate wellness, health promotion, and fitness.

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in physical activities and those offered by other departments and applied to the minor.

Preparation for the minor. Advanced Physical Activities 3 and 4A, MCDB 25 and MCDB 25L.

Upper-division minor. Twenty units, distributed as follows: Advanced Physical Activities 101, 101L, 131, 149, 150, 182.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Physical Education—Sport Management

The sport management minor provides students with the administrative and managerial theory and skills preparing them for either graduate study or entry into the workplace. Coursework includes but is not limited to the study of current issues and future trends in the field.

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in physical activities and those offered by other departments and applied to the minor.

Preparation for the minor. Communication 1, Economics 3A, Statistics 5E.

Upper-division minor. Twenty units, distributed as follows: Advanced Physical Activities 130, 131, 132, 140, 160. (Recommended: Advanced Physical Activities 183.)

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Physical Activities Courses

LOWER DIVISION

All lower-division Physical Activities courses are excluded from the Letters and Science List of Courses.

The half-unit courses listed below are designed to provide a basic instructional program from which students may acquire elementary, intermediate, and advanced level skills, improve physical conditioning, and develop an appreciation for the rules, strategies and principles of a variety of sports related activities.

Courses with a $ prefix have a required fee.

Course Overviews:
• A level courses cover elementary skills and strategies and provide basic information.
• B level courses (prerequisite: A level course or consent of instructor) cover intermediate skills and strategies and provide more detailed information.
• C level courses (prerequisite: B level course or consent of instructor) cover advanced skills, strategies, and concepts.

1-1A-B-C. Rowing
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-2. Intercollegiate Baseball
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-3A-B-C. Archery
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-4A-B-C. Badminton
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-5A-B-C. Baseball
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-6A-B-C. Basketball
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

$ 1-7A-B-C. Boating and Sailing
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

$ 1-9A-B-C. Bowling
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-10A. Elementary Aerobic and Fitness Conditioning
(1/2) STAFF
Introduction to a variety of fitness training techniques that address aerobic conditioning, muscular endurance, muscular strength and flexibility.

1-10B. Intermediate Aerobic and Fitness Conditioning
(1/2) STAFF
Presentation and practice of a variety of fitness training techniques (high/low impact, step and resistance training) addressing aerobic conditioning, muscular strength and muscular endurance.

1-10C. Advanced Aerobic and Fitness Conditioning
(1/2) STAFF
An advanced level course including high/low impact, step, resistance and anaerobic training techniques. Cross-training, injury prevention and body alignment principles will be accentuated.

1-11. Intercollegiate Basketball
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-12. Cycling Fitness
(1/2) STAFF

$ 1-13A-B-C. Fencing
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-14. Intercollegiate Cross Country
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-16A Elementary Ballroom Dance
(1/2) STAFF
Introduction to a variety of movement skills and sequences necessary to perform the foxtrot, swing,

tango, waltz, mambo, salsa, and other popular social dances.

1-16B. Intermediate Ballroom Dance
(1/2) STAFF
Designed to provide students with the opportunity to improve upon the variety and sequences necessary to perform the foxtrot, swing, tango, waltz, mambo, salsa, and other popular social dances.

1-16C. Advanced Ballroom Dance
(1/2) STAFF
Designed to provide students with the opportunity to improve upon the variety and sequences necessary to perform the foxtrot, swing, tango, waltz, mambo, salsa, and other popular social dances.

1-17A. Rhythmic Sport Gymnastics
(1/2) STAFF

$ 1-18D. Theatrical Fencing
(1/2) STAFF

1-20. Field Hockey
(1/2) STAFF

1-21. Team Handball
(1/2) STAFF

1-22. Intercollegiate Golf
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-23. Intercollegiate Gymnastics
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

$ 1-24A-B-C. Golf
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-25A-B-C. Tumbling and Free Exercise
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-26A-B-C. Gymnastics Apparatus
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-28. Elementary Orienteering
(1/2) STAFF

1-29A-B-C. Racquetball
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-30A-B-C. Soccer
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-31A-B-C. Softball
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-32. Intercollegiate Softball
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-33. Intercollegiate Swimming
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-34A-B-C. Swimming
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-35A. Elementary Synchronized Swimming
(1/2) STAFF
This course provides students the opportunity to learn the skills essential to the successful completion of a synchronized swimming routine. Introduction to routine composition, music selection principles and governing body rules and regulations.

1-35B-C. Synchronized Swimming
(1/2-1/2) STAFF
B. Intermediate
C. Advanced

1-36. Jogging Fitness
(1/2) STAFF

1-37. Intercollegiate Tennis
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

$ 1-38A-B-C. Tennis
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-38D. Tournament Tennis
(1/2) STAFF
Prerequisite: Physical Activities 1-38C.
May be repeated for credit up to 6 units.

1-39A-B-C. Track and Field
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-40A-B-C. Volleyball
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-41A-B-C. Water Polo
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-42. Intercollegiate Track and Field
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-43A. Beginning Weight Training
(1/2) STAFF
A course designed for the general college population introducing and supporting concepts, principles and proper techniques of conditioning with an emphasis on strength training.

1-43B. Intermediate Weight Training
(1/2) STAFF
A course emphasizing advanced concepts, principles and proper techniques of conditioning with an emphasis on strength training.

1-43C. Advanced Weight Training
(1/2) STAFF
The course was designed to provide students with the opportunity to improve their basic physical condition, secure useful neuromuscular development, and gain recreational skills.

1-43D. Conditioning/Weight Training
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-44A-B-C. Wrestling
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-45. Intercollegiate Water Polo
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-47. Intercollegiate Volleyball
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-48. Intercollegiate Soccer
(1/2) STAFF
Prerequisite: consent of coach.
May be repeated to a maximum of 6 units.

1-49A-B-C. Springboard Diving
(1/2-1/2-1/2) STAFF
Prerequisite: consent of instructor.
A. Elementary
B. Intermediate
C. Advanced

1-57A-B-C. "Touch" Rugby
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-58A-B-C. Lacrosse
(1/2-1/2-1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-59A-B. Aqua Aerobics
(1/2) STAFF
A. Elementary
B. Intermediate

1-60. Fitness Walking
(1/2) STAFF

1-61A-B-C. Squash
(1/2) STAFF
A. Elementary
B. Intermediate
C. Advanced

1-99. Lifetime Activities Interest Class
(1/2) STAFF
Prerequisite: consent of instructor.
Enrollment not to exceed two sections of 1-99 per quarter. May be repeated to maximum of 6 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
This class makes it possible for a student to take instruction beyond the elementary, intermediate, and advanced levels of any Physical Activities 1-class.

Advanced Physical Activities Courses

LOWER DIVISION

All lower-division Advanced Physical Activities courses are excluded from the Letters and Science List of Courses.

2. Substance Abuse
(3) POWELL
An overview course designed to introduce students to physiological, psychological, and social ramifications of alcohol and drug abuse. Topics such as peer pressure, psychosocial stress, abuse patterns, intervention programs, drug testing, and utilization of local agencies will be discussed.

3. Nutrition for Health
(3) GILBERT
An examination of the interdependent relationships between diet, health and disease. Basic nutrition principles, food selection, proper diet and lifetime health habits are emphasized.

4A-B-C. Life Fitness
(2-2-2) GILBERT
Prerequisites: B: Advanced Physical Activities 4A. C: Advanced Physical Activities 4B.
A progressive series of classes designed to provide a basic understanding of health and fitness. Theoretical frameworks and fitness related activities will be pursued at each course level.

$ 5A. First Aid and Cardiopulmonary Resuscitation
(3) POWELL, CERIALE, HOUGHTON
The course develops the knowledge for prevention and the skills necessary for administering

immediate care to victims of accidents or sudden illness occurring in home and outdoor environments. Cardiopulmonary resuscitation and personal safety are emphasized. Successful completion may lead to standard first aid and personal safety and CPR certification.

6A-B. Personal Defense
(2-2) ORNELAS

Prerequisite: Physical Activities 6A is prerequisite to 6B.

A course designed primarily for but not limited to women. Emphasis will be placed on self defense techniques, skills, and "rules of avoidance and safety."

7. Leadership and Team Building: Theory and Practice
(2) HORODOWICH

Introduction to experiential education using a traditional Ropes Challenge Course and group initiatives as the medium. Team building, personal awareness and goal setting skills are developed; overcoming fears, mutual support, and trust are fostered through a supportive yet challenging environment.

8. Multi-Event Endurance Training: Theory and Practice
(2) POWELL

Recommended preparation: students must have ability to swim, bike, and run.

An opportunity to learn theory and practice methods required of a competitive triathlete. Emphasis on training techniques, injury prevention and mental preparation for competition.

30A-B-C. Appreciation of Sports
(2-2-2) DALE

Lecture, demonstrations, and selected learning experiences for the general university student leading to an understanding and appreciation of athletics and recreational sports.

32E. Principles of Officiating
(2) STAFF

The course focuses on the principles, standards, techniques, and rules of officiating intramural sports. Successful completion may lead to certification for officiating UCSB intramurals.

32F. Principles of Officiating
(2) DALE

The principles, standards, techniques, and rules for officiating team and individual sports popular in the fall.

32S. Principles of Officiating
(2) DALE

The principles, standards, techniques, and rules for officiating team and individual sports popular in the spring and summer.

32W. Principles of Officiating
(2) DALE

The principles, standards, techniques, and rules for officiating team and individual sports popular in the winter.

48. Lifeguard Training and Basic Rescue/ Water Safety
(2) HOUGHTON

Prerequisite: Advanced Swimming Proficiency Test.

Successful completion of the course may lead to the American Red Cross Lifeguard Certificate.

49. Water Safety Instruction and Introduction to Health Services Education
(3) HOUGHTON

Prerequisite: Physical Activities 48 or current American Red Cross Lifeguard and Basic Rescue/ Water Safety Certification.

Includes analysis and performance of swimming skills related to personal and small craft safety; theory and application of methods for organizing and presenting aquatic materials. Satisfactory completion of the course may lead to American Red Cross Water Safety Instructor's Certificate.

50L. Care and Prevention of Athletic Injuries Lab
(1) STAFF

Students examine basic concepts and practical techniques of athletic taping, as well as various treatment modalities related to athletic injuries.

98. Reading: Physical Activities, Recreation, Athletics, and Exercise
(1-4) STAFF

Prerequisite: consent of instructor.

Students must have a minimum 3.0 grade-point average. May be repeated for credit to a maximum of 8 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Critical review and discussions of selected subjects within physical activities, recreation, athletics, or exercise science.

99. Introduction to Research
(1-4) STAFF

Prerequisite: consent of instructor.

Students must have a minimum 3.0 grade-point average. May be repeated for credit to a maximum of 8 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Directed study, oriented towards research to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research or laboratory project on an individual or group basis.

UPPER DIVISION

Many, but not all, upper-division Advanced Physical Activities courses are included in the Letters and Science List of Courses. *See page 109 for details.*

101. Physiology of Exercise
(4) CERIALE, GILBERT

Prerequisites: EEMB 25 or MCDB 25; upper-division standing.

Exploration of acute and chronic human physiological adaptations resulting from exposure to exercise. Examination of the theoretical bases and methodology for creating physiological changes in light of current training methods.

101L Exercise Physiology Laboratory
(1) GILBERT

Prerequisites: MCDB 25 or EEMB 25; and Advanced Physical Activities 101.

A series of laboratory experiments demonstrating the principles of physiological adaptations to exercise. Instruction in exercise stress testing techniques, body composition, pulmonary functions, electrocardiography, and data analysis.

130. Sport Administration
(4) FERRER

Prerequisite: upper-division standing.

Not open for credit to students who have completed Advanced Physical Activities 130A.

An introduction to the basic principles and problems of administering (planning, organizing, leading, and evaluating) athletic and recreational sports programs at the community, high school, collegiate, and professional levels.

131. Sport and Exercise Psychology
(4) MURRAY, SPAVENTA

Prerequisite: upper-division standing.

Not open for credit to students who have completed Advanced Physical Activities 130C.

The scientific study of people and their behavior in sport and exercise settings. Examination of individual and group performance enhancement strategies through application of data, knowledge and skills from psychology and related fields. An overview of the evolving field of sport and exercise psychology is presented.

132. Sport Sociology
(4) DALE, MURRAY

Prerequisite: upper-division standing.

Not open for credit to students who have completed Advanced Physical Activities 130D.

Examination of the issues and impact of sport in various cultures and subcultures within the context of sociology. Study of sport relevant to how it is influenced by and influences the basic institutions of society: family, economics, politics, religion, and education.

136. Movement Education in the Elementary School
(3) SPAVENTA

Prerequisite: upper-division standing.

An analysis and study of the principles and practices of movement education with emphasis on the development of basic movement skills, sport skills, and games. The course also includes examination and construction of curriculum for grades K-6.

140. Sport Management
(4) FERRER

An overview of professional sport management in North America. The political, historical, social, economic, and cultural impacts will be explored. Topics include team management, organizational administration, legal issues, public relations, and facility management.

146AA-ZZ. Special Topics in Health and Sport
(1-4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units provided that the letter designations are different.

149. Applied Kinesiology
(4) ROMEO

Prerequisites: MCDB 25 or EEMB 25; upper-division standing.

Examination of anatomical and mechanical fundamentals of human movement as they relate to sport and exercise. Includes the study of structure and function of skeletal muscle and physiology of muscle contraction.

150. Care and Prevention of Athletic Injuries
(3) ROMEO

Prerequisite: EEMB 25L or MCDB 25L.

A comprehensive overview of basic concepts and techniques associated with prevention, evaluation, treatment and rehabilitation of athletic injuries. Examination of the practical application for prevention and the therapeutic measure relative to sports activities.

151. Advanced Athletic Training
(4) STAFF

Prerequisite: Advanced Physical Activities 150 or MCDB 25L or EEMB 25L.

Preparation for advancement in the field of athletic training. Emphasis on the theoretical and clinical application of therapeutic modalities and rehabilitation as applied to athletic injuries. Administrative responsibilities of the athletic trainer will also be addressed.

160. Fiscal/Facility Management
(4) ROMEO

Prerequisite: upper-division standing.

An investigation of financial processes required to administer the operation of any sport, recreation or athletic program. Management principles involved in planning, developing, operating and maintaining sport and athletic facilites will be addressed.

170A-Q. Techniques and Advanced Analysis of Team Sports
(3) STAFF

Prerequisite: upper-division standing.

The technique of teaching individual and team skills of a variety of team sports and advanced analysis of that sport which is essential to a coach of competitive teams at the interscholastic and college level.

A. Football
B. Basketball
C. Baseball
D. Track and Field
E. Water Polo
F. Swimming and Diving

G. Soccer
H. Gymnastics
I. Volleyball
J. Softball
K. Wrestling
L. Racquet Sports
M. Golf
N. Lacrosse
P. Rowing
Q. Rugby

175A. Methods and Principles of Fitness Instruction
(3) WILLIAMS-EVANS
Prerequisites: MCDB 25 and 25L, or EEMB 25 and 25L; and, Physical Activities 1-10A or 1-10B or 1-10C; and, Advanced Physical Activities 101 and 149.
Training course for students to become qualified fitness instructors. Students analyze, practice, and apply skills necessary for leading individual and group exercise.

176. Methods and Principles of Muscular Fitness Instruction
(3) STAFF
Prerequisites: MCDB 25 and 25L; Advanced Physical Activities 101 and 149; Physical Activities 1-43A or 1-43B or 1-43C.
Training to teach muscular strength, muscular endurance, and flexibility classes. Skills and knowledge are applied to the use of free weights, machines, stability balls, bands, gravity, or other resistive equipment. Focus on isolated muscular contraction and extension.

180. Practicum in Athletic Coaching
(3) STAFF
Prerequisite: consent of instructor.
Open only to Physical Education: Athletic Coaching minors.
Required for Physical Education minors in the Athletic Coaching track. Conducting activity classes or coaching athletic teams, under supervision of an experienced instructor or coach.

181. Practicum in Fitness Instruction - Group Training
(3) STAFF
Prerequisites: Advanced Physical Activities 175A and 176.
Final preparation for students pursuing a Fitness Instruction Minor with a group fitness emphasis. Students are involved in supervised internships at clubs, exercise facilities, high schools, and colleges.

182. Practicum in Exercise and Health Science
(3) STAFF
Prerequisites: Advanced Physical Activities 101L; consent of instructor.
Open only to Physical Education: Exercise and Health minors.
Examination of theoretical knowledge and information applied to the field of health promotion and disease prevention. Introduction to applied techniques and procedures involved in health and fitness testing.

183. Practicum in Sport Management
(3) ROMEO
Prerequisite: consent of instructor.
Open only to Physical Education: Sport Management minors.
Provides students with hands on experience in a professional setting which may include: administration, marketing, promotion, budget, personnel, advertising, special events and media relations related work.

184. Practicum in Fitness Instruction - Personal Training
(3) STAFF
Prerequisite: Advanced Physical Activities 176.
Final preparation for Fitness Instruction Minors pursuing a Personal Training emphasis.

193. Internship in Physical Activities, Recreation, Athletics, and Exercise Science
(1-4) STAFF
Prerequisite: consent of instructor.
May be repeated for credit for a maximum of 4 units.
This course is designed to provide students with the opportunity to obtain practical experience by working under faculty supervision as an intern within the Department of Physical Activities, recreation, athletics, or exercise science areas or for local, state, federal, or private agencies.

199. Independent Studies in Physical Activities
(1-5) STAFF
Prerequisites: upper-division standing; consent of instructor.
Open only to advanced students approved by the coaching certification advisor and faculty members involved. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.
This course provides an opportunity for students in physical activities to pursue a particular area of interest under the guidance of an expert in the field.

GRADUATE COURSE

392. Student Teaching—Coaching
(3-9) STAFF
Prerequisite: graduate standing.
A course designed to satisfy the California teaching credential. Available to students accepted in the Graduate School of Education.

Physics

Department of Physics,
Division of Mathematical, Life, and Physical Sciences,
Broida Hall 3019;
Telephone (805) 893-5990
Fax (805) 893-3307
E-mail: ugrad@physics.ucsb.edu
Web site: www.physics.ucsb.edu
Department Chair: S. James Allen

Faculty

Guenter Ahlers, Ph.D., UC Berkeley, Professor (statistical mechanics—experimental)

S. James Allen, Ph.D., Massachusetts Institute of Technology, Professor (condensed matter physics—experimental)

Robert Antonucci, Ph.D., UC Santa Cruz, Professor (observational astrophysics—experimental)

David D. Awschalom, Ph.D., Cornell University, Professor (condensed matter physics—experimental)

Leon Balents, Ph.D., Massachusetts Institute of Technology, Assistant Professor (theoretical condensed matter)

Lars Bildsten, Ph.D., Cornell University, Professor (theoretical astrophysics)

Omer M. Blaes, Ph.D., International School for Advanced Studies, Trieste Italy, Associate Professor (theoretical astrophysics)

Claudio F. Campagnari, Ph.D., Yale University, Associate Professor (high energy physics—experimental)

David S. Cannell, Ph.D., Massachusetts Institute of Technology, Professor (statistical physics—experimental)

Jean Carlson, Ph.D., Cornell University, Professor (theoretical condensed matter physics)

Deborah Fygenson

ASSISTANT PROFESSOR, PHYSICS

In her advanced laboratory course for physics majors, Deborah Fygenson guides students through landmark experiments from the twentieth century. One goal is to make difficult concepts from optics and quantum mechanics tangible for the students. "But the class is more than a lot of fancy demos that can't be fit into a lecture hour," she said. "It is a hands-on introduction to the experimental process."

"The taste of discovery can be addicting. You can help place students at the limits of knowledge and give them a chance to learn by doing."

Fygenson is excited about getting students involved in research. "The university is a place for intellectual risk-taking and adventure," she says. She wants students to experience the uncomfortable thrill of realizing that some questions don't have easy answers, even if they have the tools to figure them out. "The taste of discovery can be addicting. You can help place students at the limits of knowledge and give them a chance to learn by doing. It is a kind of learning they can't get anywhere else."

Andrew N. Cleland, Ph.D., UC Berkeley, Assistant Professor (condensed matter physics—experimental)

France A. Córdova, Ph.D., California Institute of Technology, Professor (astrophysics—experimental)

Douglas Eardley, Ph.D., UC Berkeley, Professor (relativistic astrophysics)

Matthew P. A. Fisher, Ph.D., University of Illinois, Professor (theoretical condensed matter)

Roger Freedman, Ph.D., Stanford University, Senior Lecturer with Security of Employment. Joint appointment with the College of Creative Studies.

Deborah K. Fygenson, Ph.D., Princeton University, Assistant Professor (biophysics—experimental)

Steve Giddings, Ph.D., Princeton University, Professor (theoretical elementary particle physics)

David J. Gross, Ph.D., UC Berkeley, Professor (particle physics—theory)

Carl Gwinn, Ph.D., Princeton University, Associate Professor (experimental astrophysics)

Elisabeth G. Gwinn, Ph.D., Harvard University, Associate Professor (experimental condensed matter physics)

Helen G. Hansma, Ph.D., UC Berkeley, Adjunct Associate Professor (biophysics—experimental)

Paul K. Hansma, Ph.D., UC Berkeley, Professor (scanning probe microscopy—experimental)

James B. Hartle, Ph.D., California Institute of Technology, Professor (relativistic astrophysics—theoretical)

Alan J. Heeger, Ph.D., UC Berkeley, Professor (condensed matter physics—experimental). Joint appointment with the Department of Materials.

Gary Horowitz, Ph.D., University of Chicago, Professor (general relativity)

Atac Imamoglu, Ph.D., Stanford University, Professor (condensed matter and applied physics). Joint appointment with the Department of Electrical and Computer Engineering.

James S. Langer, Ph.D., University of Birmingham, Professor (condensed matter physics—theoretical). Joint appoint with the Department of Materials.

Philip M. Lubin, Ph.D., UC Berkeley, Professor (astrophysics and cosmology—experimental)

Andreas W. W. Ludwig, Ph.D., UC Santa Barbara, Associate Professor (condensed matter physics—theoretical)

Horia I. Metiu, Ph.D., Massachusetts Institute of Technology, Professor (theoretical physical chemistry). Joint appointment with the Department of Chemistry.

Rollin J. Morrison, Ph.D., University of Illinois, Professor (high energy physics—experimental)

Harry N. Nelson, Ph.D., Stanford University, Professor (elementary particle physics—experimental)

Philip A. Pincus, Ph.D., UC Berkeley, Professor (polymers, colloids, surfactants, membranes, polymer-membrane interactions). Joint appointment with the Department of Materials.

Joseph G. Polchinski, Ph.D., UC Berkeley, Professor (elementary particle physics—theoretical)

Jeffrey Richman, Ph.D., California Institute of Technology, Professor (high energy physics—experimental)

Francesc Roig, Ph.D., University of Massachusetts, Senior Lecturer with Security of Employment. Joint appointment with the College of Creative Studies.

John Ruhl, Ph.D., Princeton University, Assistant Professor (cosmology—experimental)

Douglas J. Scalapino, Ph.D., Stanford University, Professor (condensed matter physics—theoretical)

Mark Sherwin, Ph.D., UC Berkeley, Professor (condensed matter—experimental)

Mark Srednicki, Ph.D., Stanford University, Professor (particle physics—theoretical)

Andrew Strominger, Ph.D., Massachusetts Institute of Technology, Adjunct Professor (particle physics—theoretical)

Robert L. Sugar, Ph.D., Princeton University, Professor (particle physics—theoretical)

Michael Witherell, Ph.D., University of Wisconsin, Adjunct Professor (high energy physics—experimental)

Anthony Zee, Ph.D., Harvard University, Professor (particle physics—theoretical)

Emeriti Faculty

Paul H. Barrett, Ph.D., UC Berkeley, Professor Emeritus

David O. Caldwell, Ph.D., UC Los Angeles, Professor Emeritus

Robert Eisberg, Ph.D., UC Berkeley, Professor Emeritus

José R. Fulco, Ph.D., University of Buenos Aires, Professor Emeritus

Daniel W. Hone, Ph.D., University of Illinois, Professor Emeritus

Vincent Jaccarino, Ph.D., Massachusetts Institute of Technology, Professor Emeritus

Walter Kohn, Ph.D., Harvard University, Professor Emeritus

Harold W. Lewis, Ph.D., Harvard University, Professor Emeritus

Stanton J. Peale, Ph.D., Cornell University, Professor Emeritus

Raymond F. Sawyer, Ph.D., Harvard University, Professor Emeritus

Glen E. Schrank, Ph.D., UC Los Angeles, Associate Professor Emeritus

Robert Schrieffer, Ph.D., University of Illinois, Professor Emeritus

William C. Walker, Ph.D., University of Southern California, Professor Emeritus

Affiliated Faculty

Cyrus R. Safinya, Ph.D. (Materials)

The physics major provides the foundations for careers in basic and applied physics; in interdisciplinary areas such as astronomy, biophysics, environmental science, oceanography, and scientific instrumentation; and in economics, law, and medicine.

The Department of Physics offers undergraduate programs leading to the B.S. or the B.A. degree, a minor in astronomy and planetary science, and a minor in physics. It also offers a graduate program leading to a Ph.D. in physics. The bachelor of science degree requires a number of electives which may be taken according to the particular aims of the student, after consultation with a faculty advisor. It is designed to provide basic preparation for graduate school in physics, another physical science, or engineering, and for work in industry or a research laboratory. The bachelor of arts degree aims at providing students with a basic knowledge of the physical sciences that can be applied to a career in the natural or behavioral sciences, economics, or to further study in a professional school.

Students are assigned faculty advisors at the beginning of each academic year; it is the student's responsibility to meet with the advisor to plan a major program. Transfer students must consult the appropriate advisor as soon as possible.

Research Opportunities, which lists the faculty and their current research, is available at: www.physics.ucsb.edu/

Students with a bachelor's degree in physics who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Prizes and Awards

The Arnold T. Nordsieck Memorial Prize is awarded each year to an outstanding senior who has demonstrated notable promise in research.

In addition, there is an Outstanding Senior and an Outstanding Teaching Assistant prize awarded annually.

The John Cardy Award is given each year to a first-year graduate student with the strongest performance in the core graduate courses.

Physics Honors Program

The physics department has special opportunities for good students at both the lower-division and the senior level. Honors discussion sections for Physics 1H, 2H, 3H, 4H, and 5H are taught by the faculty in association with the freshman/sophomore course Physics 1-5. Special honors laboratory courses (Physics 13AH, 13BH, and 13CH) require unusual creativity and are available for a few students each year. Physics 142L, 143L, and 145L are available to qualified seniors. All of the honors courses require the consent of the instructor and qualify for the College of Letters and Science Honors Program.

Senior Honors Program

The physics senior honors program is available for students with at least a 3.5 grade-point average and is arranged with the help of the honors advisor at the beginning of the senior year. This program is based on one or more of the following courses: Physics 142L, 143L, 145L, 194, 198, and 199. The student prepares a written report and presents a seminar on his or her work.

Undergraduate Program

Undergraduate advising. Prior to registration for the fall quarter each year, all physics majors must make an appointment with the appropriate physics advisor. The advisors' names may be obtained at the Department of Physics, Broida

Hall 3019, or by calling (805) 893-3888. Before meeting with the advisor, each student must pick up the appropriate B.S./B.A. advising form from the department office. One copy of the form will be given to the student for future reference; a second copy will remain on file in the department office.

Bachelor of Science—Physics

Preparation for the major. The following courses should be completed in the first two years: Physics 1, 2, 3, 4, 5, 3L, 4L, 5L; Mathematics 3A-B-C, 5A-B-C; Chemistry 1A-B (or Chemistry 2A-B). The advisor can suggest a course schedule for freshmen.

Upper-division major. Fifty-six upper-division units are required for the B.S. degree in physics, including Physics 100A, 105A-B, 110A-B-C, 115A-B-C, 119A, and 128A-B. Also required are 14 additional units of upper-division physics electives, of which no more than 10 units may be earned in laboratory courses. With the consent of the department chair, 4 units of upper-division mathematics may be substituted toward the elective requirement. In order to satisfy prerequisites for those courses, which are normally taken in the senior year, students should include 100A, 105A-B, 115A-B and 119A in their junior year program.

Note: All B.S. candidates are required (1) to fulfill the General Education requirements of the College of Letters and Science for the B.S. degree; (2) to have their lower- and upper-division programs approved by the physics faculty advisor during the first quarter in which they have declared their major and subsequently once each year prior to enrollment; and (3) to maintain a C average in the major. Students who do not maintain a grade-point average of 2.0 in upper-division physics courses will be subject to dismissal from the major. (See major requirements section of this catalog.)

Bachelor of Arts—Physics

Preparation for the major. The following courses should be completed in the first two years: Physics 1, 2, 3, 4, 5, 3L, 4L, 5L; Mathematics 3A-B-C, 5A-B-C; Chemistry 1A-B (or Chemistry 2A-B). A suggested course schedule for freshmen is available from the faculty advisor.

Upper-division major. Forty-two upper-division units are required for the B.A. degree, including 30 units of upper-division physics courses and 12 units of chemistry, EEMB, geography, geology, mathematics, MCDB, physics, or engineering electives approved by a faculty advisor. Of the 30 upper-division units in physics, 6 must be upper-division laboratory.

Note: All B.A. candidates are required (1) to fulfill the General Education requirements of the College of Letters and Science for the B.A. degree; (2) to have their lower- and upper-division programs approved by the physics faculty advisor during the first quarter in which they have declared their major and subsequently once each year prior to enrollment; and (3) to maintain a C average in the major. Students who do not maintain a grade-point average of 2.0 in upper-division physics courses will be subject to dismissal from the major. (See major requirements section of this catalog.)

Minor—Physics

Except for Physics 198 and 199, all courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered by the Department of Physics and those offered by other departments and applied to the minor. A maximum of 5 units of Physics 198 and 199 graded P/NP may be applied to the minor.

Preparation for the minor. Physics 1, 2, 3, 3L, 4-4L, 5-5L; Mathematics 3A-B-C (or 2A-B-3C) and 5A-B-C.

Upper-division minor. Eighteen units, distributed as follows: Physics 100A, 115A-B, and 7 units of upper-division physics electives.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Minor—Astronomy and Planetary Science

Except for Physics 198 and 199, all courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered by the Department of Physics and those offered by other departments and applied to the minor. A maximum of 5 units of Physics 198 and 199 graded P/NP may be applied to the minor.

Preparation for the minor. Physics 1, 2, 3, 3L, 4-4L, 5-5L; Mathematics 3A-B-C and 5A-B-C.

Upper-division minor. Eighteen units, distributed as follows: Physics 132, 133 (note that 132 and 133 are taught every other year in alternating years, and can be taken by students in either order), and 10 units of upper-division electives chosen from: Physics 131, 134, 141, 145L, 198*, 199*; Geology 123, 124C, 124G, 159A, 159B, 198*, 199*.
*Courses with asterisks must be approved by the advisor for Astronomy and Planetary Science.

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must fulfill the university requirements described in the chapter "Graduate Education at UCSB."

Master of Arts—Physics

The Department of Physics does not offer a terminal M.A. program. Admission is to the Ph.D. program only. Master's degrees may be awarded only in the case of students who leave the Ph.D. program or for continuing students advanced to candidacy for the Ph.D. program who request the M.A. degree.

The requirements for the M.A. are (1) completion of 45 quarter-units of work, with a minimum of 32 units of graduate-level courses and the rest approved by the student's academic advisory committee; and (2) successful completion of an M.A. examination administered by the student's graduate advisory committee (successful completion of the advancement to candidacy exam fulfills this requirement).

Doctor of Philosophy—Physics

Admission

A candidate for admission to the Ph.D. program must present an undergraduate degree in physics, or its equivalent, and Graduate Record Examination (GRE) scores in the verbal, quantitative, and analytical sections as well as the Advanced Subject in physics. In addition to departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." A program to admit exceptionally qualified first-year students as research assistants, particularly in experimental physics, has been implemented. Further information on the program, and a description of current research, can be found at www.physics.ucsb.edu/.

Degree Requirements

First-year students will be required to pass the following graduate physics courses with a grade of B or better: Physics 205 (Classical Mechanics), 210A-B (Electromagnetic Theory), 215A-B-C (Quantum Mechanics), and 219 (Statistical Mechanics). The departmental graduate advisor can exempt students from taking a required course, or may require other courses in addition to those listed here. In addition, theoretical physics students must complete a minimum of five advanced graduate courses and experimental physics students must complete a minimum of three advanced graduate courses with a grade of B or better. At least one of these courses must be in an area clearly distinct from the student's field of specialization—such a determination will be made by the graduate advisor. Exams will include, but are not limited to, an oral advancement to candidacy exam, normally taken during the second year, and an oral dissertation defense of a research-based thesis.

The final period of graduate study is primarily directed toward individual research and the preparation of a dissertation. Research, either experimental or theoretical, is conducted under the supervision of a faculty member, normally in an area related to his or her own field of specialization.

Astronomy Courses

LOWER DIVISION

1. Basic Astronomy
(4) STAFF

A survey of the development of astronomy with an emphasis on understanding the observable properties of the solar system, the sun and other stars, our own and other galaxies, and the entire universe. Topics of current interest will be discussed as time permits. (F,W,S)

1H. Honors Supplement to Basic Astronomy
(1) STAFF

Prerequisite: honors standing.

A supplement to Astronomy 1 emphasizing fundamental concepts and additional topics in Astronomy. Intended for highly motivated and well prepared students. (F,W,S)

2. History of the Universe
(4) STAFF

Prerequisite: Astronomy 1.

The content will vary with the professor and student interests. Course has included modern

extragalactic astronomy and cosmology, quasars, active galactic nuclei, dark matter, gravitational lenses, the early universe, the origins of life, and the possibility of extraterrestrial intelligence. (S)

Physics Courses

LOWER DIVISION

1. Basic Physics
(4) STAFF
Prerequisite: Mathematics 3A.
Classical mechanics, kinematics, vectors, Newton's laws, work and energy, conservation laws, momentum and collisions. (W)

1H. Honors Supplement to Basic Physics (Mechanics)
(1) STAFF
Prerequisite: students must have a Math SAT score above 700.
A supplement to Physics 1 emphasizing fundamental concepts and possibly additional topics in physics. Intended for highly motivated and well prepared students. (W)

2. Basic Physics
(4) STAFF
Prerequisites: Physics 1 and Mathematics 3A-B.
Second course in calculus-based sequence for physical science and engineering majors. Rotational motion, conservation of angular momentum, gravitation, static equilibrium, electrostatics, electrostatic field and potential Gauss's law, capacitance, DC circuits. (S)

2H. Honors Supplement to Basic Physics (Mechanics and Electrostatics)
(1) STAFF
Prerequisite: concurrent enrollment in Physics 2 with a minimum B+ grade-point average.
A supplement to Physics 2 emphasizing fundamental concepts and possibly additional topics in physics. Intended for highly motivated and well prepared students. (S)

3. Basic Physics
(3) STAFF
Prerequisites: Physics 2; and Mathematics 3A-B-C; concurrent enrollment in Physics 3L.
Recommended preparation: Mathematics 5A (may be taken concurrently).
Magnetism, Biot-Savart law, Ampere's and Faraday's laws, Maxwell's equations, simple harmonic motion, AC circuits, wave motion, electromagnetic waves. (F)

3H. Honors Supplement to Basic Physics (Electromagnetism and Waves)
(1) STAFF
Prerequisite: concurrent enrollment in Physics 3 with a minimum B+ grade-point average.
A supplement to Physics 3 emphasizing fundamental concepts and possibly additional topics in physics. Intended for highly motivated and well prepared students. (F)

3L. Physics Laboratory
(1) STAFF
Prerequisite: concurrent enrollment in Physics 3.
Introductory laboratory emphasizing experiments in electromagnetism. (F)

4. Basic Physics
(3) STAFF
Prerequisites: Physics 3; concurrent enrollment in Physics 4L.
Recommended preparation: Mathematics 5B (may be taken concurrently).
Optics (reflection, refraction, interference, polarization, diffraction), special relativity, quantum physics. (W)

4H. Honors Supplement to Basic Physics (Optics and Modern Physics)
(1) STAFF
Prerequisite: concurrent enrollment in Physics 4 with a minimum B+ grade -point average.
A supplement to Physics 4 emphasizing fundamental concepts and possibly additional topics in physics. Intended for highly motivated and well prepared students. (W)

4L. Physics Laboratory
(1) STAFF
Prerequisite: concurrent enrollment in Physics 4.
Introductory laboratory emphasizing wave motion and optics. (W)

5. Basic Physics
(3) STAFF
Prerequisites: Physics 4; concurrent enrollment in Physics 5L.
Recommended preparation: Mathematics 5C (may be taken concurrently).
Kinetic theory, thermodynamics, fluids, sound, solids. (S)

5L. Physics Laboratory
(1) STAFF
Prerequisites: Physics 4; concurrent enrollment in Physics 5.
Introductory laboratory emphasizing atomic, molecular, and condensed matter physics. (S)

6A-B-C. Introductory Physics
(3-3-3) STAFF
Prerequisite: Mathematics 3A or 34A (may be taken concurrently): Physics 6A for 6B: Physics 6B for 6C.
A. Mechanics. (F,W)
B. Heat, thermodynamics, electricity, and magnetism. (W,S)
C. Electromagnetic waves, optics, modern physics. (F,S)

6AL. Introductory Experimental Physics
(1) STAFF
Prerequisite: concurrent enrollment in Physics 6A.
Self-directed laboratory course where students seek to discover simple mathematical descriptions to laws governing various physical phenomena. Each student is responsible for deciding what to measure, how to measure it, and what interpretation can be placed on the results. (F,W)

6BL. Introductory Experimental Physics
(1) STAFF
Prerequisite: concurrent enrollment in Physics 6B.
Experiments in the mechanical, electrical, and thermal properties of matter, the behavior of light, and quantum phenomena with application to the biological sciences. (W,S)

6CL. Introductory Experimental Physics
(1) STAFF
Prerequisite: concurrent enrollment in Physics 6C.
Experiments in the mechanical, electrical, and thermal properties of matter, the behavior of light, and quantum phenomena with application to the biological sciences. (F,S)

10. Concepts of Physics
(4) STAFF
Not open for degree credit to students who have completed Natural Science 1A, Physics 1 or 6A.
Lecture, 3 hours; discussion, 1 hour.
A survey of important concepts in physics for the nonscience major. The contents will vary depending on the interests of the students and instructor. (W,S)

13AH. Honors Introduction to Experimental Physics
(2) STAFF
Prerequisites: concurrent enrollment in Physics 3 and 3H.
Not open for degree credit to students who have completed Physics CS 15A.
Designed to introduce undergraduates to contemporary experimental research at an early stage in their careers. Emphasis is placed on acquiring an "experimental frame of mind", professional communication skills, and a broad range of laboratory techniques.

13BH. Honors Experimental Physics
(2) STAFF
Prerequisites: Physics 13AH; concurrent enrollment in Physics 4 and 4H.
Not open for degree credit to students who have completed Physics CS 15B.
Designed to introduce undergraduates to contemporary experimental research at an early stage in their careers. Emphasis is placed on acquiring an "experimental frame of mind", professional communication skills, and a broad range of laboratory techniques.

13CH. Honors Experimental Physics
(2) STAFF
Prerequisites: Physics 13BH; concurrent enrollment in Physics 5.
Not open for degree credit to students who have completed Physics CS 15C.
Designed to introduce undergraduates to contemporary experimental research at an early stage in their careers. Emphasis is placed on acquiring an "experimental frame of mind", professional communication skills, and a broad range of laboratory techniques.

16. Undergraduate Seminar
(1) STAFF
Selected topics of special interest designed to display the broad diversity of physics. Also designed to introduce students to faculty research and department labs. This course is strongly recommended for freshmen, transfer students, and prospective majors within physics. (F)

UPPER DIVISION

A grade of C- or higher is required to satisfy the prerequisites for all upper-division courses. In series of courses, such as Physics 105A-B, the earlier courses are considered prerequisites for the later ones. Exceptions will be made only with the consent of the instructor.

100A-B. Methods of Theoretical Physics
(3-3) STAFF
Prerequisites: Mathematics 5C for Physics 100A; Physics 100A for Physics 100B.
Mathematical methods in physics: theory of functions of complex variables, Fourier series, integral transforms, partial differential equations of physics, boundary value problems, Legendre and Bessel functions. Introduction to Hilbert spaces. (F,W)

105A-B. Classical Mechanics
(3-3) STAFF
Prerequisites: Physics 2; Mathematics 5B (may be taken concurrently) for Physics 105A: Physics 105A for 105B.
Dynamics of a particle and systems of particles. Harmonic oscillator. Curvilinear coordinates. Central force motion. Scattering. Elementary rigid body motion. Moving coordinate systems. Lagrange's equations and generalized coordinates. Forces of constraint. Rigid body rotation. Small vibrations and normal modes. Hamilton's equations. (W,S)

106. Nonlinear Phenomena
(4) STAFF
Prerequisites: Physics 105A; or ME 163; or upper-division standing in ECE.
Same course as ECE 183 and ME 169. Not open for credit to students who have completed ECE 163C.
An introduction to nonlinear phenomena. Flows and bifurcations in one and two dimensions, chaos, fractals, strange attractors. Application to physics, engineering, chemistry, and biology. (S)

106G. Nonlinear Phenomena
(4) STAFF
Prerequisite: graduate standing.
Students must get consent of the physics graduate advisor.
Same description as Physics 106. (S)

110A-B-C. Electromagnetism
(4-4-4) STAFF
Prerequisites: Physics 5; concurrent enrollment in Mathematics 5C for Physics 110A: Physics 110A for 110B: Physics 110B for 110C.
Electrostatics, magnetostatics, electric and magnetic properties of materials, Maxwell's equations, electromagnetic waves, radiation from charged particles, special relativity. (F,W,S)

115A-B-C. Quantum Mechanics
(4-4-4) STAFF

Prerequisites: Physics 5; Physics 100A or Mathematics 124A (may be taken concurrently) for Physics 115A: Physics 115A for 115B: Physics 115B for 115C.

Inadequacies of classical physics and quantum mechanical resolutions. The postulates of quantum mechanics. Schroedinger's equation, measurements, operators, and observables. Angular momentum and spin, the exclusion principle, perturbation theory and scattering theory. Application to atomic, molecular and nuclear physics. (W,S,F)

115AG-BG-CG. Quantum Mechanics
(4-4-4) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor. Not open to students who have taken Physics 115A-B-C, or the respective parts thereof in this institution.

Inadequacies of classical physics and quantum mechanical resolutions. The postulates of quantum mechanics. Schroedinger's equation, measurements, operators, and observables. Angular momentum and spin, the exclusion principle, perturbation theory and scattering theory. Application to atomic, molecular and nuclear physics. (W,S,F)

119A-B. Thermal and Statistical Physics
(3-4) STAFF

Prerequisites: Physics 5 for Physics 119A: Physics 119A for Physics 119B.

Physics 119A not open for credit to students who have completed Physics 118. Physics 119B not open for credit to students who have completed Physics 119.

A. Thermodynamics: three laws of thermodynamics, phase diagrams, entropy, equipartition of energy, specific heat, reversible and irreversible processes, pressure, viscosity, thermal conductivity, diffusion. (F)

B. Statistical mechanics: Boltzmann, Fermi-Dirac, Bose-Einstein distribution laws. Relation of thermodynamic variables and microscopic properties. (W)

119BG. Thermal and Statistical Physics
(4) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor. Not open for credit to students who have completed Physics 119B.

Same description as Physics 119A-B. (W)

123A-B. Condensed Matter Physics
(4-4) STAFF

Prerequisite: Physics 115A for 123A: Physics 123A for 123B.

Classification of solids; crystal symmetry, thermal electric and magnetic properties; metals, semiconductors, and the band theory of electronic states; magnetic resonance; superconductivity; imperfections. Emphasis will be placed on both fundamental and applied aspects. (F)

123AG-BG. Condensed Matter Physics
(4-4) STAFF

Prerequisite: Physics 115A or 115AG for Physics 123AG: Physics 123AG for 123BG.

Open only by consent of the physics graduate advisor to graduate students who have not taken Physics 123A-B or the respective parts.

Same description as Physics 123A-B. (F,W)

125. Elementary Particle Physics
(4) STAFF

Prerequisite: Physics 115B.

Introduction to quarks and leptons and the phenomenology of the particles they comprise; fundamental symmetries, invariance principles, and the associated quantum numbers, strong, electromagnetic and weak interactions and their relationship. (S)

125G. Elementary Particle Physics
(4) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor.

Same description as Physics 125. (S)

127A. Analog Electronics
(3) STAFF

Prerequisites: Mathematics 3A-B or 34A-B; and, Physics 1 and 2, or 6A-B.

Passive circuits, diodes, transistors, field effect transistors, operational amplifiers, feedback and control. Design, building and testing of analog circuits. (F)

127AG. Analog Electronics
(3) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor.

Same description as Physics 127A. (F)

127B. Digital Electronics
(3) STAFF

Prerequisites: Mathematics 3A-B or 34A-B; and, Physics 1 and 2, or 6A-B; and Physics 127A.

Gates, combinational and sequential logic, multiplexes, counters, shift registers, memory and microprocessors. Design, building and testing of digital circuitry, including a modern microprocessor based computer system. (W)

127BG. Digital Electronics
(3) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor.

Same description as Physics 127B. (W)

128A-B. Advanced Experimental Physics
(3-3) STAFF

Prerequisite: Physics 115B for Physics 128A: Physics 128A for 128B.

Selected experiments in contemporary physics, e.g., holography, laser light scattering zeeman effect, x-rays, superconductivity, magnetic resonance, Mossbauer effect. (F,W)

129. Computer Interfacing
(4) STAFF

Prerequisites: Mathematics 3A-B or 34A-B; and, Physics 1 and 2, or 6A-B.

Not open to graduate students.

Use of personal computer for control and measurement in a hands-on project oriented environment. Introduction to a real time multitasking operating system and the C programming language. Basic feedback control theory. (S)

129G. Computer Interfacing
(4) STAFF

Prerequisite: graduate standing.

Students must get consent of the physics graduate advisor.

Same description as Physics 129. (S)

131. Gravitation and Relativity
(4) STAFF

Prerequisites: Physics 105A-B.

Physics 105B may be taken concurrently only with the consent of the instructor.

An introduction to Einstein's general relativity. The spacetime of special relativity, the principle of equivalence, gravity as geometry, the description of spacetime geometry, the spacetime of a relativistic star, solar system tests of general relativity, gravitational collapse, black holes, cosmology. (W)

132. Stellar Structure and Evolution
(4) STAFF

Prerequisite: Physics 5.

Observed properties and classification of stars, the Hertzsprung-Russell diagram, stellar atmospheres, hydrostatic equilibrium, energy transport, equations of state, thermonuclear reaction rates, origin of the elements, life history of stars, stellar death, compact objects, star formation.

133. Galaxies and Cosmology
(4) STAFF

Prerequisite: Physics 5.

Observed properties of galaxies, the interstellar medium, stellar dynamics, spiral arms, galaxy clusters, dark matter, quasars, the Hubble expansion, Friedmann models, thermal history of the universe, the origin of the light elements, the cosmic microwave background structure formation. (F)

134. Observational Astrophysics
(4) STAFF

Prerequisite: Physics 5.

Recommended preparation: Physics 132 or 133.

Techniques and implementation of observational methods in astronomy/astrophysics. Sensors, digital-image processing and analysis, research projects with computer-controlled remote access telescope using a digital image sensor. Studies of variable stars, galaxy morphology, supernova, etc. (W)

135. Biophysics and Biomolecular Materials
(3) STAFF

Prerequisite: Physics 5 or 6C.

Same course as Materials 135.

Structure and function of cellular molecules (lipids, nucleic acids, proteins, and carbohydrates). Genetic engineering techniques of molecular biology. Biomolecular materials and biomedical applications (e.g., bio-sensors, drug delivery systems, gene carrier systems). (S)

141. Optics
(4) STAFF

Prerequisite: Physics 5.

Modern geometrical and physical optics. Polarization, coherence, interference, and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering, and holography. Selected topics on lasers, light scattering, and quantum optics as time permits.

142L. Experimental Research in Condensed Matter Physics
(1-4) STAFF

Prerequisites: Physics 5; consent of instructor.

May be repeated for credit to a maximum of 4 units.

Offers qualified undergraduates the opportunity to work in research laboratories in condensed matter physics.

143L. Experimental Research in Elementary Particle Physics
(1-4) STAFF

Prerequisites: Physics 5; consent of instructor.

May be repeated for credit to a maximum of 4 units.

Offers qualified undergraduates the opportunity to work in experimental research in elementary particle physics.

144. Physics of Complex Fluids
(4) STAFF

Prerequisites: Physics 119A, 105A-B and 110A-B.

Introduction to the physics of complex fluids. Topics will include: solution thermodynamics, electrolytes, polymer solutions, collodial dispersions, wetting, surfactants, micellar solutions, liquid crystals, microemulsions, gels, and aggregation phenomena.

145L. Experimental Research in Astrophysics
(1-4) STAFF

Prerequisites: Physics 5; consent of instructor.

May be repeated for credit to a maximum of 4 units.

Offers qualified undergraduates the opportunity to work in experimental research in astrophysics. Each staff member has his/her own course identified by a letter code. (F,W,S)

150. Special Topics in Astrophysics
(1-4) STAFF

Prerequisite: Physics 5.

Course varies from year to year according to the currents of the times.

151. Special Topics in High Energy Physics
(1-4) STAFF

Prerequisite: Physics 5.

Course varies from year to year according to the currents of the times.

152. Special Topics in Condensed Matter Physics
(1-4) STAFF

Prerequisite: Physics 5.

Course varies from year to year according to the currents of the times.

157. Special Topics in Biophysics
(1-4) STAFF

Prerequisite: Physics 5.

Course varies from year to year according to the currents of the times.

158. Special Topics in Relativity
(1-4) STAFF

Prerequisite: Physics 131.

Course varies from year to year according to the currents of the times.

194. Group Studies for Advanced Students
(1-4) STAFF

Prerequisites: upper-division standing; consent of instructor.

Only 4 units may apply to the major.

Themes will vary according to instructor.

198. Directed Reading
(1-4) STAFF

Prerequisites: consent of instructor; upper-division standing; completion of two upper-division courses in physics.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 12 units may be earned in all Physics 198/199/199RA courses combined.

Each staff member has their own directed reading course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

199. Independent Studies in Physics
(1-S) STAFF

Prerequisites: consent of instructor; upper-division standing; completion of two upper-division courses in physics.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 12 units may be earned in all Physics 198/199/199RA courses combined.

Directed individual study open to qualified seniors in the department. Each staff member has their own independent studies course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

199RA. Independent Research Assistance
(1-S) STAFF

Prerequisites: consent of instructor; upper-division standing; completion of two upper-division courses in physics.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 12 units may be earned in all Physics 198/199/199RA courses combined.

Undergraduate research for qualified seniors to gain valuable experience in research methodology.

GRADUATE COURSES

200A-B-C. Mathematical Methods of Physics
(4-4-4) STAFF

Mathematical techniques useful in physics, including the theory of functions of a complex variable, linear algebra, Fourier transforms, differential equations, special functions, Cartesian tensors, calculus of variations and numerical methods.

205. Classical Mechanics
(4) STAFF

Review of Lagrangian mechanics. Variational principles. Hamilton's equations. Canonical transformations. Hamilton Jacobi Theory. Action angle variables. Time dependent and canonical perturbation theory. Central forces and scattering. Small vibrations. Rigid body motion. Poincare maps. Non-Integrable systems. Hamiltonian and dissipative chaos. (F)

210A-B. Electromagnetic Theory
(4-4) STAFF

Electrostatics, magnetostatics, boundary value problems, time varying fields, Maxwell's equations, radiation, multipole fields, scattering, relativistic particle dynamics. (W,S)

215A-B-C. Quantum Mechanics
(4-4-4) STAFF

Fundamental principles; Schroedinger equation; angular momentum; perturbation theory; scattering theory, emission, and absorption of radiation; Dirac equation. (F,W,S)

217A-B. The Many Body Problem in Condensed Matter Physics
(4-4) STAFF

Prerequisite: Physics 215C.

Field theoretic methods as applied to (non-relativistic) condensed matter systems. Green's functions and diagrammatic techniques applied to various examples of interacting many body systems, including fermions, bosons, and spins. Relationship of theoretical quantities to physical measurements. (W,S)

219. Statistical Mechanics
(4) STAFF

Prerequisites: Physics 205, 215A and 119 taken at another institution.

Fundamental principles of classical and quantum statistics. Non-interacting Boltzmann, Bose, and Fermi systems. Virial expansion and other approaches to interacting systems. Phase transitions. (W)

220. Advanced Topics in Statistical Mechanics
(4) STAFF

Prerequisite: Physics 219.

Course will cover some of the following topics: a) critical phenomena-phase diagrams, first and second order phase transitions, scaling theory, high-temperature expansions, renormalization group; b) non-equilibrium statistical mechanics-Stochastic processes, Langevin equations, fluctuation-dissipation theorem, master equation , fluid dynamics. (S)

221A-B-C. Relativistic Quantum Field Theory
(4-4-4) STAFF

Introduction to the theory of Lorentz covariant quantized fields. Global and local conservation laws. Path integral formulation. Applications to quantum electrodynamics, quantum chromodynamics, electroweak and interactions. Other possible topics include grand unification, the renormalization group, anomalies, current algebra, and supersymmetry. (F,W,S)

223A-B-C. Concepts and Phenomena of Condensed Matter Physics
(4-4-4) STAFF

Prerequisites: Physics 219 and 215C.

Same course as Materials 224A-B-C.

Lattice and electron dynamics. Elementary excitations and collective phenomena. Transport properties. Disorder and localization. Long-range order and broken symmetries. Magnetism, superconductivity and liquid crystals. Properties and structures of polymers, membranes, and self-assembling systems. (F,W,S)

225A. Elementary Particle Physics
(4) STAFF

Prerequisite: Physics 125 or 215C.

The phenomenology of the standard model of particle physics. QED and QC process. (F)

225B. Elementary Particle Physics
(4) STAFF

Prerequisite: Physics 225A.

Weak interactions; neutrino physics; C,P, and CP violation; electroweak gauge theory and symmetry breaking. Design of detectors and experiments; searches for new phenomena. (W)

229A-B. Gauge Theories of Elementary Particles
(4-4) STAFF

Prerequisites: Physics 221A-B-C.

Quantum theory of non-Abelian gauge fields. Local, global, and spontaneous symmetry breaking. Collective phenomena; solutions, instantons, and magnetic monopoles. Effective field theories. Lattice gauge theory. Applications to the Standard Model of elementary particles. (F,W)

231A-B-C. General Relativity
(4-4-4) STAFF

Prerequisites: Physics 210A-B. Physics 231C may be repeated with consent of instructor.

Gravity as geometry, differential geometry, Einstein's equation, relativistic stars, gravitational collapse, black holes, cosmology, gravitational radiation, and special topics. (F,W,S)

232. Stellar Structure and Evolution
(4) STAFF

Physics of stellar structure, equations of state and heat transport. Birth of stars and physics of brown dwarfs. Thermonuclear burning and main sequence stellar structure. Evolution of stars and mass loss. Origin, physical structure, and cooling of compact objects. (S)

233. The Interstellar Medium
(4) STAFF

Theory and observations of the interstellar space, and the physical processes that form and shape them. Atomic, molecular, and ionized gas; dust; heating and cooling; shocks; generation and evolution of cosmic rays; formation of stars. (W)

234. High Energy Astrophysics
(4) STAFF

Accretion power in a range of astrophysical contexts, from quasars to galactic black holes. Rapid release of thermonuclear energy, Type I X-ray bursts, classical novae, Type Ia supernovae. Relativistic jets from black holes, non-thermal radiation processes, physics of gamma-ray bursts.

235. Extragalactic Astrophysics
(4) STAFF

Nebular astrophysics, active galactic nuclei, supermassive black holes, stellar dynamics, galaxies, clusters, dark matter, gravitational lensing, the intergalactic medium and galaxy formation. (F)

236. Cosmology
(4) STAFF

Galaxy surveys, the cosmic distance ladder, redshift and expansion, Friedmann models, classical tests, the cosmic microwave background, big bang nucleosynthesis, structure formation.

250. Special Topics in Astrophysics
(1-4) STAFF

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

251. Special Topics in High Energy Physics
(1-4) STAFF

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

252. Special Topics in Condensed Matter Physics
(1-4) STAFF

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

254. Special Topics in Experimental Physics
(1-4) STAFF

May be repeated provided the topics vary.

Topics include experimental techniques, the physics of experimental apparatus, and methods of analyzing experimental data. The content of the course will vary from year to year. (F)

255. Special Topics in Theoretical Physics
(1-4) STAFF

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

257. Special Topics in Biophysics
(1-4) STAFF

May be repeated for credit provided topics are different.

Course varies from year to year according to the currents of the times.

258. Special Topics in Relativity
(1-4) STAFF
May be repeated for credit provided topics are different.
Course varies from year to year according to the currents of the times.

260A. Colloquium
(1) STAFF

260B. Seminar in Macromolecular Physics and Organic Solids
(1) STAFF

260C. Seminar in General Relativity
(1) STAFF
Talks on topics in gravity and general relativity pertinent to current doctoral research in the field.

260D. Seminar in Theoretical Physics
(1) STAFF

260E. Condensed Matter Seminar
(1) STAFF

260F. Seminar in High Energy Physics
(1) STAFF

260G. Graduate Seminar
(1) STAFF
Weekly seminar on topics of research currently being pursued in the Department of Physics.

260H. Seminar in Astrophysics and Cosmology
(1) STAFF
Talks on topics in astrophysics and cosmology pertinent to current doctoral research in the field.

260I. Seminar in Applied Physics
(1) STAFF
Discussions of topics in materials physics and condensed matter physics pertinent to current doctoral research.

260J. Physics Outreach
(1) STAFF
Active participation in an outreach program that presents physics demonstrations and experiments on the road to local schools in order to provide a valuable learning experience for K-12 students.

500. Teaching Assistant Seminar
(2) STAFF
No unit credit allowed toward advanced degree. Required course for all teaching assistants.
Covers development of teaching techniques especially oriented to lower-division physics laboratory instruction. Theoretical aspects covered at beginning of each quarter. Practical techniques discussed including weekly meeting with class instructor, formal evaluation, and videotaping analysis. (F)

503. Research Assistant Seminar
(1-3) STAFF
No unit credit allowed toward advanced degrees.
Research assistants must give one or more lectures in the subject of their research in the Department of Physics. (Normally combined with Physics 260G.)

594AA-ZZ. Special Topics
(1-4) STAFF
Prerequisite: consent of instructor.
Special seminar on research subjects of current interest. Each staff member has a seminar identified by a number code listed in the *Schedule of Classes*. (F,W,S)

595AA-ZZ. Group Studies
(1-6) STAFF
Prerequisite: consent of instructor.
May be repeated for credit to a maximum of 12 units.
Each staff member has a group studies course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

596AA-ZZ. Directed Reading and Research
(2-12) STAFF
Prerequisite: consent of instructor.
Individual tutorial. Reading and research in special topics including work done as the basis for the dissertation. Each staff member has a directed reading and research course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

599AA-ZZ. Dissertation Preparation
(1-12) STAFF
Prerequisite: consent of instructor.
May be repeated for credit up to 24 units.
This course is reserved for writing the dissertation. Each staff member has a research course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

Political Science

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Faculty

James Adams, Ph.D., University of Michigan, Assistant Professor (comparative politics)

Aaron Belkin, Ph.D., UC Berkeley, Assistant Professor (international relations)

Bruce Bimber, Ph.D., Massachusetts Institute of Technology, Assistant Professor (public policy)

Gayle Binion, Ph.D., UC Los Angeles, Professor (public law)

Marguerite Bouraad-Nash, Ph.D., University of North Carolina, Lecturer (international politics, Middle East politics)

Kathleen Bruhn, Ph.D., Stanford University, Assistant Professor (comparative politics, Latin America)

Benjamin J. Cohen, Ph.D., Columbia University, Louis G. Lancaster Professor of International Relations (international relations, international political economy)

Peter Digeser, Ph.D., Johns Hopkins University, Associate Professor (political theory)

Laurie A. Freeman, Ph.D., UC Berkeley, Assistant Professor (comparative politics, Japan)

Garrett Glasgow, Ph.D., California Institute of Technology, Assistant Professor (quantitative methods, political behavior)

Michael Gordon, Ph.D., Harvard University, Associate Professor (international politics, Western Europe)

M. Kent Jennings, Ph.D., University of North Carolina, Professor (political socialization)

Cynthia S. Kaplan, Ph.D., Columbia University, Associate Professor (comparative politics, Soviet Union, political economy)

Alan P. L. Liu, Ph.D., Massachusetts Institute of Technology, Professor (Chinese politics, comparative politics)

Joseph Lodge, J.D., University of Michigan, Lecturer (presiding judge, Santa Barbara/Goleta Municipal Court)

Alan Liu

PROFESSOR, POLITICAL SCIENCE

When political science professor Alan Liu came to the United States to earn his master's degree in journalism, he had no idea that his career path would lead to UCSB. He had planned to become a reporter for an English-speaking newspaper in Taiwan, but "fate intervened," as he puts it, and he was invited to participate in a research project at the Center for International Studies at MIT.

"I hope they (my students) can do in-depth analyses of international events regarding China and the U.S."

He completed the doctoral program in political science there and after two years of postdoctoral research at the University of Michigan, Liu was invited to join the faculty at UCSB.

"My role as a teacher is to inform my students in a very objective manner and to teach them how to think for themselves," says Liu. "I want my students to know more about China and Asia and the political and economic relationship between that area and the United States," says Liu. I hope they can do in-depth analyses of international events regarding China and the U.S. and be knowledgeable leaders in their communities."

Fernando Lopez-Alves, Ph.D., UC Los Angeles, Associate Professor (comparative politics, Latin America, political economy)

Lorraine M. McDonnell, Ph.D., Stanford University, Professor (public policy)

Daniel Philpott, Ph.D., Harvard University, Assistant Professor (international relations)

Eric R.A.N. Smith, Ph.D., UC Berkeley, Associate Professor (public opinion, voting behavior, party realignment, quantitative methods)

Dana R. Villa, Ph.D., Princeton University, Assistant Professor (political theory)

M. Stephen Weatherford, Ph.D., Stanford University, Professor (political analysis, public opinion)

John T. Woolley, Ph.D., University of Wisconsin, Madison, Professor (public policy, political economy)

Alan J. Wyner, Ph.D., Ohio State University, Senior Lecturer with Security of Employment (state and local politics, public policy and administration)

Emeriti Faculty

Stanley V. Anderson, LL.B., Ph.D., UC Berkeley, Professor Emeritus (public law, international law, Scandinavian studies)

Gordon E. Baker, Ph.D., Princeton University, Professor Emeritus (American political and constitutional thought, state politics)

Haruhiro Fukui, Ph.D., Australian National University, Professor Emeritus (Japanese politics, comparative politics)

Dean Mann, Ph.D., UC Berkeley, Professor Emeritus (American politics, natural resources policy and administration)

Peter H. Merkl, Ph.D., UC Berkeley, Professor Emeritus (comparative politics, European politics)

John E. Moore, Ph.D., Princeton University, Professor Emeritus (public and regulatory administration)

A. E. Keir Nash, Ph.D., Harvard University, Professor Emeritus (politics and population, constitutional law, political change)

Robert C. Noel, Ph.D., Northwestern University, Professor Emeritus (regional politics of the Middle East, international relations, comparative politics)

Thomas S. Schrock, Ph.D., University of Chicago, Professor Emeritus (political philosophy, public law)

Affiliated Faculty

Cedric J. Robinson, Ph.D. (Black Studies)

Steven H. Chaffee, Ph.D. (Communication)

Are democracies with only two political parties more representative than those with many parties? How can governments respect diverse ethnic, racial, and religious identities, and still promote bonds of common citizenship? What should be the role of the United States in an increasingly interdependent global economy? These are the types of questions that political scientists explore, but they also represent issues that require ordinary citizens to make informed judgments.

The Department of Political Science offers a balanced program, emphasizing the integration of theory and practice rather than any single approach or methodology. In addition to its standard program, the department also offers a public service emphasis and an international relations emphasis for undergraduate majors. An undergraduate honors thesis program is available to selected students. The M.A. and Ph.D. programs encompass work in all fields of political science.

Advising is available to undergraduates through the departmental undergraduate advisor who counsels students during scheduled hours and by appointment. Students are encouraged, in addition, to consult with individual faculty members about course content and professional or career concerns. Graduate advisors are appointed by the department and may be contacted through the department office.

Students with a bachelor's degree in political science who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Prizes and Scholarships

The Department of Political Science awards three undergraduate scholarships and prizes each year. Two of these awards are open to students selecting the optional emphasis in international relations, while the third is open to all majors in their junior year.

The Lancaster Scholarship is given to the top student or students with an emphasis in international relations. Interested students must submit an application by the deadline early spring quarter. Criteria for selection include a student's grade-point average, successful completion of coursework in international relations and comparative politics, financial need, and length of residence in Santa Barbara County.

The Reg Robinson Award is given annually to the student or students with the highest grade point average in international relations and comparative politics courses. Final selection is made by the Reg Robinson Award Committee in the Department of Political Science.

The Kevin Patrick Moran Scholarship is awarded to undergraduate students majoring in political science who demonstrate leadership qualities, academic promise, and a devotion to the peaceful resolution of conflict. Interested students must submit an application and essay by the deadline early spring quarter.

For further information regarding these scholarships and prizes, please contact an advisor in the undergraduate advising office, Ellison Hall 3838.

Honors Thesis Program

In the winter quarter of the junior year, students with outstanding academic records are eligible for the department's honors thesis program. Those accepted begin their work in the following quarter in a specially designed seminar. In their senior year, they take additional seminar work and write a thesis. Honors graduates will be identified separately each year at the head of the graduation list for political science, and will be eligible for graduation with Distinction in the Major. Details are available from the department office.

Undergraduate Program

Bachelor of Arts—Political Science

Preparation for the major. Admission into the pre-political science major is contingent upon successful completion of the requirements stipulated below. Students may declare a pre-political science major after they have completed at least two political science courses from the pre-major with a 2.6 grade-point average or above. Once the preparation for the major is completed with the required grade-point average, students must then petition for admission into full major status and at that time may declare an optional emphasis. Admission to the pre-major does not guarantee admission to full major status. To qualify for admission into the political science major, students must complete Political Science 1, 6, 7, and 12 with a grade-point average of 2.6 or above. In addition, students must complete Economics 1 and 2 (or 109) and History 4A-B-C. Transfer and upper-division students should consult the undergraduate advisor about substitutions. Students planning on majoring in political science should take Political Science 1, 6, 7, and 12 during their freshman or sophomore year.

Upper-division major. Forty-one upper-division units are required, which must include at least one course from each of Areas A through C:

A. Political Science 105, 121, 147;
B. Political Science 110, 112, 113, 114, 187, 188, 189;
C. Political Science 115, 151, 152, 153, 154, 155, 157, 158, 179, 180, 181;
D. Political Science 104A and 104AL.

The remaining 24 units may include courses from the above options other than those used for the 12-unit requirement, as well as other upper-division political science courses (excluding 100). No more than a combined total of 8 units of courses numbered 190 and above, nor more than 4 units each in Political Science 190, 192, 193, 194, or 199, may apply toward major requirements. Up to 4 units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts—Political Science—International Relations Emphasis

Preparation for the major. Admission into the pre-political science major is contingent upon successful completion of the requirements stipulated below. Students may declare a pre-political science major after they have completed at least two political science courses from the pre-major with a 2.6 grade-point average or above. Once the preparation for the major is completed with the required grade-point average, students must then petition for admission into full major status and at that time may declare an optional emphasis. Admission to the pre-major does not guarantee admission to full major status. To qualify for admission into

the political science major, students must complete Political Science 1, 6, 7, and 12 with a grade-point average of 2.6 or above. In addition, students must complete Economics 1 and 2 (or 109) and History 4A-B-C. Transfer and upper-division students should consult the undergraduate advisor about substitutions. Students planning to major in political science should take Political Science 1, 6, 7, and 12 during their freshman or sophomore year.

Required work in relevant disciplines: Psychology 102 or Sociology 2. Two additional courses must be taken from the following list: Anthropology 115; Economics 112A-B, 114, 180, 181; Geography 5; Psychology 134, 138; Sociology 138, 138G (or Global Peace and Security 138), 141; History 171A-B or another upper-division history course in Asian, Latin American, European, or African history.

Language requirement: completion of the fifth quarter or its equivalent.

Upper-division major. Forty-five upper-division units in political science, to be distributed as follows:

A. Political Science 105, 121, and 127;
B. Two courses from Political Science 109, 119, 120, 122, 123, 124, 125, 128, 129, 131, 186A;
C. Two courses from Political Science 101, 134, 135, 136, 139, 140, 141, 142 143, 146A-B, 147, 148A-B, 150A-B-M;
D. Three courses from the following, but no more than two courses from any one category:
   (1) Political Science 172, 180, 181, 185
   (2) Political Science 153, 155, 157, 158
   (3) Political Science 110, 112, 113, 114, 187, 188, 189;
E. Political Science 104A and 104AL.

Note: With departmental approval, 4 units of Political Science 192 (or Interdisciplinary 192DC) may be substituted for one course in Area D.

Up to 4 units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts—Political Science—Public Service Emphasis

The coursework in the public service emphasis focuses on the fields of politics and public administration and includes work in sociology and economics. Students in this emphasis are required to serve a one-quarter, full-time internship in a governmental or political office during their senior year. Internships are open to all political science majors, whether or not they choose the public service emphasis. To qualify for the internship, students are expected to have a 3.0 grade-point average and junior or senior standing; they must also have completed courses relating to the work they plan to perform as an intern. Departmental approval is required and interested students should see the undergraduate advisor for further details.

Preparation for the major. Admission into the pre-political science major is contingent upon successful completion of the requirements stipulated below. Students may declare a pre-political science major after they have completed at least two political science courses from the pre-major with a 2.6 grade-point average or above. Once the preparation for the major is completed with the required grade-point average, students must then petition for admission into full major status and at that time may declare an optional emphasis. Admission to the pre-major does not guarantee admission to full major status. To qualify for admission into the political science major, students must complete Political Science 1, 6, 7, and 12 with a grade-point average of 2.6 or above. In addition, students must complete Economics 1 and 2 (or 109) and History 4A-B-C. Transfer and upper-division students should consult the undergraduate advisor about substitutions. Students planning to major in political science should take Political Science 1, 6, 7, and 12 during the freshman or sophomore year.

Required work in relevant disciplines:
A. Economics 3A and 3B;
B. Writing 109SS.

Upper-division major. Forty-five upper-division units in political science are required, to be distributed as follows:

A. Two courses from Political Science 170, 172, 180, 181, 185;
B. One course from Political Science 152, 153, 154, 174, 175, 176, 179;
C. One course from Political Science 153, 155, 157, 158;

Note: Political Science 153 may be used in Area B or C of major but not in both.

D. One course from Political Science 161, 162, 163;
E. One course from Political Science 115, 165, 166, 167, 168;
F. One course from Political Science 105, 110, 113, 114, 119, 121, 127, 147, 189;
G. Political Science 104A and 104AL;
H. A total of 12 units of Political Science 192 and 199, Interdisciplinary 192DC and 199DC, to be taken during one quarter of internship while registered at UCSB.

Up to 8 units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Graduate Program

The Department of Political Science offers four fields of study: American politics, international relations, comparative politics (including area studies), and political theory, and one nonexamination field, methodology. In addition to departmental requirements, candidates for graduate degrees must fulfill the university requirements described in the chapter "Graduate Education at UCSB."

Admission

The Department of Political Science offers two closely related graduate programs: an M.A./Ph.D. program for students who have completed the B.A., and a Ph.D. program for those who come to UCSB with an M.A. from another institution. The department's Graduate Program Statement offers a detailed explanation of the program. In addition to departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB."

Master of Arts—Political Science

Degree Requirements

The M.A. degree in political science is offered under Plan 1 (thesis plan) and Plan 2 (examination plan). In Plan 1, candidates must complete at least 44 units of coursework, normally in graduate courses in political science, and write a thesis. In some cases, a candidate may be required to take an oral examination.

In Plan 2, candidates must complete at least 48 units of coursework, normally in graduate courses in political science, and pass one Ph.D. written qualifying examination from among the four examination fields listed above.

Doctor of Philosophy—Political Science

Only students who complete the requirements for the M.A. with sufficient distinction will be invited to continue in the Ph.D. program.

Degree Requirements

Residence. A minimum of two years of full-time residence in graduate study, at least one year of which is spent in continuous residence, is required for the doctorate.

Fields of study. The Ph.D. program centers on coursework and preparation in two written examination fields, coursework and preparation in a focus examination area, and coursework in third and fourth nonexamination fields. Typically, field choices are made from among the following: political theory, American politics, international relations, and comparative politics. It is also possible to tailor special fields to the interests of individual students.

Appropriate courses may be taken at other UC campuses through the Intercampus Exchange Program.

Language and research skills. The student may choose a foreign language option or a research skills option to fulfill the language/skills requirement for the Ph.D. The research skills option requirement may be fulfilled by successful completion of three methodological courses.

Examinations. After successful completion of the written qualifying examinations and the focus examination, the student will take an oral qualifying examination which will primarily focus on his/her dissertation prospectus.

Dissertation. With the advice and approval of the doctoral committee, each student will select a dissertation topic in the major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences

Students pursuing a Ph.D. in political science may petition to add an interdisciplinary emphasis in Quantitative Methods in the Social Sciences (QMSS). The QMSS emphasis helps students acquire the skills needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methods, and participation in interdisciplinary colloquia and research projects.

Political Science Courses

LOWER DIVISION

Freshmen entering fall quarter are advised to take Political Science 1 or 12.

1. Political Ideas in the Modern World
(4) DIGESER, SCHROCK

Perennial questions and diverse responses with emphasis on such central concepts as liberty, equality, power, authority, justice, law, and constitutionalism. Democracy and authoritarianism. The nexus between ends and means in political life.

6. Introduction to Comparative Politics
(4) ADAMS, BRUHN

Introduction to the workings of various political systems with an emphasis on governmental institutions and political processes. Comparison of political systems using some of the basic concepts of political analysis.

7. Introduction to International Relations
(4) PHILPOTT

An introduction to the basic concepts, theories, and problems of international relations; balance of power, deterrence, the states system, imperialism, realism, idealism, levels of explanation, war and peace.

12. American Government and Politics
(4) BIMBER, SMITH, WYNER

Political ideas, institutions, and processes of American government. The role of Congress and the president in policy formation and of the Supreme Court in interpreting the Constitution.

98. Readings in Political Science
(1-4) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit to a maximum of 4 units. No unit credit allowed toward the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Critical reviews and discussions of related topics in political science.

99. Introduction to Research
(1-4) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit to a maximum of 4 units. No unit credit allowed toward the major. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research or work in a research group.

UPPER DIVISION

101. Mexican Politics
(4) BRUHN

This course focuses on understanding the contemporary Mexican political system from a political economy perspective. It explores the development and behavior of Mexican institutions and actors, and the challenges facing them in a context of major economic and political change.

104A. Introduction to Research in Political Science
(4) ADAMS, GLASGOW, SMITH, WEATHERFORD

An introduction to the design and evaluation of political research: formulating clear hypotheses, developing appropriate measures, and analyzing data using simple statistical methods and qualitative techniques; emphasizes clear exposition of arguments, interpretations, and findings.

104AL. Introduction to Research in Political Science Lab
(1) STAFF

Prerequisite: concurrent enrollment in Political Science 104A.

Experience with designing research, and collecting and analyzing data.

104B. Political Research Methods and Data Analysis
(4) WEATHERFORD

Prerequisites: Political Science 104A; upper-division standing.

Introduces intermediate statistical methods through multivariate regression, exploring advanced capabilities of PC-based software for quantitative analysis and graphical presentation; emphasis on design and execution of student projects, and on writing, presenting, and revising research reports.

104BL. Political Research Methods and Data Analysis Lab
(1) STAFF

Prerequisites: Political Science 104AL; upper-division standing.

Experience with actual data analysis in solving quantitative political problems. It must be taken with Political Science 104B.

105. Theories of Comparative Politics
(4) FREEMAN, LOPEZ-ALVES

Prerequisite: Political Science 6.

A comparison of federalism, political parties, and executive leadership in different countries. A core course generally recommended, and in some cases required, for advanced work in comparative government.

106AA-ZZ. Special Topics in Political Science
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of eight units provided letter designations are different.

Lectures in special areas of interest in political science. Specific course titles to be announced by the department each quarter offered.

108. Politics and Literature
(4) BRUHN

This course will explore problems concerning alienation, obligation, power, freedom, and fulfillment as treated by ancient and modern authors.

109. Revolution and Mass Movement
(4) LIU

Prerequisite: Political Science 6.

Analyzing the dynamics of revolutions from the French and Soviet to contemporary revolutions in Asia, Latin America, and the Middle East.

110. Political Concepts
(4) DIGESER

Prerequisite: Political Science 1.

Introduction to some of the main concepts of political theory, such as the individual and the state, freedom and equality, political obligation, and their relevance to modern society and government.

112. Marxism
(4) ROBINSON

Prerequisite: Political Science 1.

Conceptions of state, law, alienation, and the relationship between theory and practice. Historical dimensions, including the Hegelian heritage, Marxist theory, various stages of Marx's intellectual development, Engels' contributions, and the "socialism/communism" split; current aspects of Neo-Marxism.

114. Democratic Theory
(4) DIGESER

Prerequisite: Political Science 1.

An analysis of the philosophical bases of democracy, such as political obligation (Why should I obey the state?), political equality (Why should one person have one vote?), liberty, consent, representation, and rights.

115. Law in the Modern State
(4) BINION

Prerequisite: Political Science 12.

Legal institutions in democratic societies, with particular reference to the United States. The role of lawyers, judges, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions.

116. The Political Consequences of Electoral Laws
(4) ADAMS

Prerequisite: Political Science 104A, or Sociology 3 or 104A, or Psychology 5, or Communications 88.

Survey of the variety of electoral laws in use throughout the world; analysis of their effects upon the nature of political systems and representation; addresses the philosophical question, "What is the fairest way to count votes?"

117. Jurisprudence
(4) STAFF

Prerequisite: Political Science 115.

An inquiry into the nature of law and justice.

118. Comparative Ethnic Politics
(4) KAPLAN

Prerequisite: Political Science 6 or 7.

Examination of the political consequences of ethnicity. Theoretical approaches to issues addressing problems of multi-ethnic states in the developing world and the successor states of the Soviet Union.

119. Ethical Issues in International Relations
(4) DIGESER

Prerequisites: Political Science 1 and 7.

An examination of the possibility and desirability of normative international political theory and an exploration of the moral dimensions of statecraft; use of force, nuclear deterrence, humanitarian intervention, distributive justice, and human rights.

121. International Politics
(4) GORDON

Prerequisite: Political Science 7.

An examination of theories concerning the actions, interactions, and relationships among nation-states.

124. International Organization
(4) STAFF

Prerequisite: Political Science 7.

The nature and function of international organization, including a study of the United Nations and the European Community.

125. International Law
(4) STAFF

Prerequisite: Political Science 7.

Nature and sources of international law; international legal personality; nationality; territory, jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

127. American Foreign Policy
(4) PHILPOTT

The United States in world politics. Policy-making institutions, particularly the Presidency, Congress, State Department, and the military establishment. Interaction between domestic and external politics.

128. Foreign Policy of the Soviet Union and Successor States
(4) KAPLAN

Prerequisite: Political Science 6 or 7.

Examination of recent work on foreign policies of the former Soviet Union and the successor states, with attention to methodological and substantive issues. Topics include: strategic theory, East-West relations, trade and the monetary system, and relations among states of the former Soviet Union.

129. United States, Europe, and Asia in the Twenty-first Century
(4) GORDON

Prerequisite: Political Science 6 or 7.

The cold war and East-West tensions. NATO and its military problems, including nuclear strategy and arms control. Soviet foreign policy and its hold over East Europe. Transatlantic strains caused by peace movements, domestic trends, and new economic problems.

131. Foreign Relations Between China and the United States
(4) LIU

The ideological and cultural attitudes of mainland China, with emphasis on general policies both within the Communist world and other areas (South Asia, Africa, and America).

134. Relations Between the United States and Mexico
(4) BRUHN

Prerequisite: Political Science 6 or 7.

A general examination of relations between the United States and Mexico in the nineteenth and twentieth centuries. Emphasis on issues such as the origins of conflict and cooperation, and current issue areas including immigration.

135. Government and Politics of Japan
(4) FREEMAN

Prerequisite: Political Science 6.

The organization and operation of Japanese politics, with particular attention to domestic political forces and problems.

136. Government and Politics of China
(4) LIU

The ideology, structure, and functions of the Chinese political system, with emphasis on the nation-buliding process under the Communist regime.

138. Political and Economic Development in Pacific Rim Countries
(4) LIU

Prerequisite: upper-division standing.

Study of domestic and international conditions contributing to the dynamics of society and economy in East Asian countries of South Korea, Taiwan, and Singapore. Emphasis on the role of the state, culture, experience of colonialism, threat of Communism, and United States aid and influence.

139. Government and Politics in Southeast Asia
(4) STAFF

Prerequisite: Political Science 6.

A general introductory survey of modern and contemporary developments in Southeast Asia.

140. Politics of France
(4) ADAMS

Prerequisite: Political Science 6.

The political culture, history, political parties, and governmental organization of France.

141. Politics of Germany
(4) STAFF

Prerequisite: Political Science 6.

The political culture, history, political and social forces, and governmental organization of Western Germany and Eastern Germany.

142. British Politics
(4) ADAMS

Prerequisite: Political Science 6.

The political culture, history, institutions, and behavior of Great Britain.

143. Politics in the Soviet Union Successor States
(4) KAPLAN

Prerequisites: Political Science 6; not open to freshmen.

The course examines the basic characteristics of the Soviet ancient regime and the forces and institutions which shaped the merging states and societies. Topics include: parliamentary and economic systems, political parties, interest groups, ethnicity, legitimacy, sovereignty and inter-state relations.

147. Third World Politics
(4) BRUHN

Prerequisite: Political Science 6.

A comparative analysis of the political systems of a selected number of African, Asian, and Middle Eastern countries, with particular development and modernization common to all of them.

148A-B. Reform and Revolution in Latin America
(4-4) LOPEZ-ALVES

Prerequisite: Political Science 6.

A. A comparative study of governmental and political development, organization, and practices in the states of Middle America.

B. A comparative study of governmental and political development, organization, and practices in the states of South America.

150A. Politics of the Middle East
(4) BOURAAD-NASH

The development of governmental institutions and political forces in the postcolonial era. Emphasis on relationships between ideology, cultural dynamics, and politics, including examination of inter-Arab conflict and the war in Lebanon.

150B. Politics of the Middle East
(4) STAFF

Prerequisite: Political Science 150A.

Political development and nationalism in the Northern Tier, Arab North Africa, and the Arabian Peninsula. The politics of oil. The resurgence of Islam, Iran, Iraq, Saudi Arabia, Turkey, Afghanistan, great power rivalry in the Middle East since 1945.

150M. The Middle East in World Affairs
(4) STAFF

Prerequisite: Political Science 6.

The Arab-Israeli struggle; the Lebanese war; oil diplomacy; the arms race; Soviet, American, and European objectives and conflicts in the Middle East.

151. Voting and Elections
(4) JENNINGS, SMITH, WEATHERFORD

Prerequisite: Political Science 104A, or Sociology 3 or 104A, or Psychology 5, or Communications 88.

Introduction to elections and voting cross-nationally and at various levels of government: the role of electoral rules, party competition and campaigns; the influence of issue, candidate, and partisan appeals on the vote; the effect of elections on public policy.

152. American Political Parties
(4) SMITH

Prerequisite: Political Science 12.

The nature, characteristics, and history of American political parties; party organization; political campaigns and finance; nominations, elections, and electoral problems.

153. Political Interest Groups
(4) WEATHERFORD

Prerequisite: Political Science 12.

The nature and function of organized interest groups and their impact upon public opinion and government.

154. Public Opinion
(4) JENNINGS, SMITH, WEATHERFORD

Prerequisite: Political Science 104A, or Sociology 3 or 104A, or Psychology 5, or Communications 88.

A study of the formation and nature of public opinion including: the public's political sophistication; the role of emotion in political thinking; nature of political culture; growth of political alienation and the forms of political participation.

155. Congress
(4) SMITH

Prerequisite: Political Science 12; concurrent enrollment in Political Science 155L.

The organization, operation, and politics of Congress; problems of representation, leadership, relations with interest groups, the White House, and the bureaucracy.

155L. Congress Laboratory
(1) SMITH

Prerequisite: concurrent enrollment in Political Science 155.

A simulation of the United States House of Representatives designed to teach the operation and politics of Congress.

157. The American Presidency
(4) WOOLLEY

Prerequisite: Political Science 104A, or Sociology 3 or 104A, or Psychology 5, or Communications 88.

Analysis of the institution of the presidency, its functions, formal and informal relationships, and its limitations within the American political system. Emphasis on the dynamics of the presidency, including presidential personality, conceptions of role, impact of public opinion, and responses to changes in the environment.

158. Power in Washington
(4) STAFF

Prerequisite: Political Science 12; upper-division standing.

An examination and assessment of the policy and political linkages between the White House and Capitol Hill decision making, legislative enactment, administrative implementation; the presidential establishment, bureaucratic politics, and the politics of influence and access in Washington.

161. State and Local Government
(4) WYNER

Prerequisite: Political Science 12.

Basic problems and recent developments with emphasis on state political forces, institutions, and processes. Intergovernmental relations.

162. Urban Government and Politics
(4) STAFF

Prerequisite: Political Science 12.

Problems of politics and administration in urban and metropolitan areas.

162L. Urban Government and Politics Laboratory
(1) STAFF

Prerequisite: concurrent enrollment in Political Science 162.

Laboratory exercises in metropolitan government and politics with emphases on local interest groups, local decision making, and intergovernmental relations.

163. California Government and Politics
(4) WYNER

Prerequisite: Political Science 12.

Characteristics of state and local government in California and an examination of political factors in the development of selected public policies.

165. Criminal Justice
(4) LODGE

Prerequisite: Political Science 12.

Problems and functions of police, prosecution, and defense relating to such problems as plea-bargaining, exclusionary rule, trials, bail, and sentencing.

166. Constitutional Law: Distribution of Power
(4) STAFF

Prerequisite: Political Science 115.

The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social, and economic forces.

167. Constitutional Law: The Bill of Rights
(4) STAFF

Prerequisite: Political Science 115.

The role of the Supreme Court as interpreter of First Amendment freedoms of expression and conscience, with some attention to procedural guarantees.

168. Constitutional Law: Civil Rights
(4) STAFF

Prerequisite: Political Science 115.

The role of the Supreme Court as interpreter of political, social, and civil rights.

170. Public Policy Analysis
(4) MCDONNELL, WOOLLEY

Prerequisite: Political Science 12.

The assumptions, goals, content, and consequences of selected domestic policies, concentrating on the period since 1960. Discussion of the nature of collective action, methods of policy analysis and evaluation, and problems of implementation.

171. Politics and Communication
(4) FREEMAN, ROBINSON

The role of communications media and their influence on politics. How definitions of what is "news" and the way it is conveyed shape public thinking on political issues and affect candidates, causes, and public perceptions of government institutions.

172. Technology Policy
(4) BIMBER

Prerequisite: Political Science 12.

Introduction to the politics of science and technology with emphasis on technology and economic competitiveness. Nature of Cold War science and technology policy, crises in policy-making during the 60's and 70's, industrial policy and critical technologies.

174. Chicano Politics
(4) STAFF

Prerequisite: upper-division standing.

Same course as Chicano Studies 174.

Political life in the barrio, political behavior of the Chicano community, and representation of Chicanos by elected officials and interest groups.

175. Politics of the Environment
(4) WYNER

Prerequisites: Political Science 12; upper-division standing.

Analysis of environmental policy issues and their treatment in the political process. Discussion of the interplay of substantive issues, ideology, institutions, and private groups in the development, management, protection, and preservation of natural resources and the natural environment.

176. Black Politics in America
(4) STAFF

Prerequisite: Political Science 12.

A general survey of political phenomena in the Black community. American political institutions, law, legislation, and administration will be examined in theory and practice to determine their function in relation to Black politics.

180. Public Administration and Public Policy
(4) MCDONNELL

Prerequisite: Political Science 12.

The nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

181. Public Administration: Organization and Process
(4) WYNER

Prerequisite: Political Science 12.

Concepts and issues of public administration, including theories of organization, decision making, administrative behavior, and budgetary processes.

184. Problems in Economy, Society, and Politics
(4) STAFF

Prerequisite: upper-division standing.

Same course as Sociology 166P.

Surveys contributions of the various social sciences to understand advanced capitalist economies. How social institutions like the family and the state influence the economy, and how economic institutions like firms and markets function as social and political organizations. Interdisciplinary; team-taught.

185. Government and the Economy
(4) WOOLLEY

Prerequisite: Political Science 12.

Government's evolving role in economic life; the cultural, political, and philosophical setting of government-business relations; the maintenance and moderation of competition; the goals, methods, and politics of regulatory administration.

186A. Introduction to International Political Economy
(4) COHEN

Prerequisite: Political Science 7.

Same course as Global Studies 123.

Introduction to the politics of international economic relations. Examination of alternative analytical and theoretical perspectives for their value in helping to understand and evaluate the historical development and current operation of the world economy.

186B. Geo-Politics in International Economics
(4) COHEN

Prerequisite: Political Science 7.

Geo-political causes and consequences of current and prospective changes in the structure of the world economy. Issues considered include shifting economic power among nations, evolving state-market relations, and the question of governance of the global economy.

187. Classical Political Theory
(4) VILLA

Prerequisite: upper-division standing.

A careful examination of major texts and thinkers in the ancient world and in medieval times.

188. Modern Political Theory
(4) VILLA

Prerequisite: Political Science 1; upper-division standing.

Development of political ideas from the sixteenth century to the nineteenth century.

189. Recent and Contemporary Political Theory
(4) DIGESER, VILLA

Prerequisite: Political Science 1.

A reconstruction of the contending theories of political order with which western intellectuals, from the nineteenth to the present century, have confronted an era of world historical changes.

192. Field Research in Political Science
(4-12) STAFF

Prerequisite: upper-division standing; consent of department.

Students must have a 3.0 overall grade-point average.

Directed research on the political process through participant observation and relevant reading. Individually assigned, instructed, and supervised field-work. Students will examine first-hand behavior in leading political roles in American politics.

194. Group Studies
(1-4) STAFF

Prerequisites: consent of instructor; upper-division standing.

Subject to departmental approval, students may repeat this course. Only 4 units may apply to the major.

Themes will vary according to instructor.

195. Honors Seminar
(4) STAFF

Prerequisite: consent of instructor.

An intensive analysis of the approaches, problems, and methodologies of a particular subfield of political science.

196. Senior Seminar in Political Science
(4) STAFF

197A-B-C. Honors Thesis Seminar in Political Science
(4-4-4) STAFF

Prerequisites: senior standing; consent of department.

Students must have a 3.3 cumulative grade-point average; 3.5 grade-point average in major. Political Science 197A-B-C is a three-quarter sequence course with the final grade issued upon completion of 197C. Only 4 units of credit may be applied toward the major.

Honors students, in three-quarter sequence of seminars, writing theses under close faculty supervision.

197D-E-F. Seniors Thesis in Political Science
(4-4-4) STAFF

Prerequisites: senior standing; consent of department.

Students must have a 3.0 grade-point average. Students may take this in-progress graded sequence for either two or three quarters with 197F designated as the final quarter.

Selected seniors pursue individual, significant research projects under close supervision of faculty readers.

199. Independent Studies in Political Science
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in political science.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Admission by special permission only; for majors. No more than 8 units of Political Science 199 may count toward completion of the major requirements.

199RA. Independent Research Assistance in Political Science
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in political science; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

Since the emphasis in some seminars changes from year to year, detailed course descriptions are available in the department office during the quarter prior to the seminar offering.

203. The Nature of Political Inquiry
(4) WEATHERFORD

The conduct of inquiry and explanation, and the nature and scientific status of the knowledge produced by research on social and political issues, are considered in the context of both the theory-building and practical, policy-oriented aspects of political science.

204. Research Design and Data Collection
(4) JENNINGS

This course is an introduction to empirical research in political science with an emphasis on design and data collection. Stress is placed on eclecticism and demonstration by example.

205. Measurement and Data Analysis in Political Research
(4) ADAMS, GLASGOW, SMITH, WEATHERFORD, WOOLLEY

This course focuses on the formulation of political questions as scientific propositions open to quantitative examination. Two major subtopics, the empirical measurement of political concepts and the statistical analysis of quantitative data, are illustrated with examples from the research literature.

206. Advanced Political Research Methods I
(4) GLASGOW, SMITH, WEATHERFORD, WOOLLEY

Prerequisite: introductory statistics and social scientific research methods.

Techniques of developing multivariate statistical models of political processes. Application of the general linear model to political dynamics and to problems with poorly-measured variables.

208. Theory, Evidence, and Explanation in Political Science
(4) BELKIN, BIMBER

This seminar investigates debates about the explanation of political phenomena. The primary emphasis is a comparison of social choice theory with historical political science and theories of the state. Students examine the assumptions, models of behavior, and styles of explanation in each tradition.

209. Games and Models in Political Science
(4) ADAMS

An extensive, diverse, and relatively nontechnical introduction to game theory and modelling techniques in political science.

215. The American Governmental Process
(4) WOOLLEY, WYNER

An examination of basic aspects of American national government, with primary attention to important contemporary literature on the subject.

225. International Relations
(4) GORDON

Basic factors shaping the political conflicts and accommodations among nations. Major attention to basic literature on the subject matter.

226. Seminar on International Economics for Non-Economists
(4) COHEN

No prior training in the discipline of economics required.

Introduction to the basic elements of international economic theory. Topics include the balance of payments and commercial policy, the global monetary and trading systems, international investment, and North-South economic relations.

227. Seminar in Micro International Relations Theory
(4) GORDON, PHILPOTT

Inside-out theories of International Relations behavior, focusing on the ways the foreign policy behavior of states is influenced by diverse political systems, domestic politics, bureaucratic organizations, public opinion, and the perceptions and personality traits of policymakers.

230. Comparative Political Systems
(4) LOPEZ-ALVES

A general survey of theories of comparative politics with some attention to concrete applications and to comparative trends in other social sciences and history.

231. Comparative Methods
(4) KAPLAN

Focuses on the logic and design of comparative studies; evaluates the utility of differing methods in relation to prominent research issues in the field.

233. Comparative Political Economy
(4) LOPEZ-ALVES

The course focuses on central theories of political economy and comparative politics. Its major objective is to train participants in comparative analysis by the critical examination of theories and application to case studies. This seminar has no specific area focus.

234. The State and Economic Development: Regional Comparisons
(4) LIU, LOPEZ-ALVES

Analysis of the character of the state and its impact on economic development in different areas of the world, discussing concepts such as state formation, bureaucratic growth, ruling coalitions, state structures, and political consolidation.

236. Democratization in Comparative Perspective
(4) BRUHN

Theoretical issues in research on democratization, emphasizing problems of transition and consolidation and methods of comparison of democratic transitions across regions.

237. Social Movements and Collective Action
(4) BRUHN, WEATHERFORD

An overview of theoretical and empirical literature dealing with social movements and collective action as it relates specifically to problems in popular organization. Readings demonstrate some empirical bias toward Latin America, as well as the United States and Europe.

240. Seminar on Classical Political Thinkers
(4) ROBINSON, SCHROCK

Prerequisite: graduate standing.

An intensive examination of major texts and thinkers in the ancient world and in medieval times.

241. Seminar on Modern Political Thinkers
(4) VILLA

Prerequisite: graduate standing.

An intensive examination of major texts and thinkers in modern times.

242. Seminar on Contemporary Political Thinkers
(4) DIGESER, VILLA

Prerequisite: graduate standing.

An intensive examination of major texts, thinkers, and movements in the contemporary world.

243. Seminar in Political Concepts
(4) DIGESER

Concepts that are crucial to the analysis, understanding, and transformation of political and social phenomena. The seminar will draw insights and examples from the classical and contemporary literature, the present, and the future.

250. Seminar in Political Socialization
(4) JENNINGS

The development of political attitudes and behavior throughout the entire life cycle. Major foci of attention include the agents of political socialization, the content of socialization, variations within and across political systems, and the impact of generational and historical effects.

251. Political Representation
(4) ADAMS, JENNINGS

Topics to be addressed include the historical development of concept and its implementation, forms and structures of representation, linkage mechanisms between elites and masses, the representation of minorities and dissidents, representation in comparative perspective, and problems in the study of representation.

252. Seminar in Public Opinion and Political Participation
(4) JENNINGS, SMITH, WEATHERFORD

Public opinion, elections, and other forms of participation are considered. Emphasis is on American politics, but theories and research are viewed in comparative perspective.

253. Seminar in Political Interest Groups
(4) WEATHERFORD

The theme of this course is the transmission of demands and grievances from the wider polity to the government by way of collective action. Formal non-party organizations as well as political and social movements are considered.

254. Seminar in the Legislative Process
(4) SMITH

An examination of a range of problems in the study of the organization, operation, and politics of American legislatures—especially the U.S. Congress.

255. Seminar in State Government and Politics
(4) WYNER

Federalism, intergovernmental relations, and political culture in the states. Political and institutional aspects of state government.

256. The American Presidency
(4) WOOLLEY

This seminar provides an intensive survey of scholarly analysis of the presidency and the interaction of the president with other branches of the national government.

259. Seminar in Political Parties
(4) SMITH

An examination of a range of problems and issues in the study of American political parties and political activists. Special attention will be given to party reform.

262. Courts and Politics
(4) BINION

Examination of the role of the courts in American politics, including an overview and selected case studies. Issues discussed include judicial selection and processes, judicial behavior, constitutional and public law, and judicial review.

265. American Political Development
(4) STAFF

An exploration of recent research and methodological debates in the new field of American political development. The course is both comparative and historical in approach, and examines such topics as statebuilding, the emergence of democracy, and class formation in America.

266. Contemporary Problems in American Government
(4) BIMBER

A survey of contemporary governance problems.

270. Theoretical Issues in International Political Economy
(4) COHEN

Prerequisite: Political Science 225.

The focus of this seminar will be on theoretical issues at the leading edge of contemporary scholarship in the field of international political economy. A principle objective will be to identify key elements of an agenda for future research.

272. Seminar on International Organization and Society
(4) PHILPOTT

Prerequisite: Political Science 225.

Examines, from a variety of theoretical perspectives, the proposition that there is an international society consisting of laws, norms, institutions, organizations, and cultures that has significant effects on the behavior of states and the character of international relations.

273A. Politics of the International Economy
(4) GORDON

Prerequisite: graduate standing.

Introduction to basic concepts. Radical, Conservative, Liberal views. Evolution of the global economy. The postwar monetary system. Industrial policies, trade, and shifts in economic power among industrialized countries.

273B. Politics of the International Economy
(4) GORDON

Resource problems and conflicts (energy, population, food, minerals); the multinational corporation. Imperialism. Problems of the developing countries. Current North-South relations.

275. War, Diplomacy and International Security
(4) BELKIN, GORDON, PHILPOTT

The seminar will probe a variety of issues, theoretical and historical (plus quite a few contemporary ones), that touch on war, power, and security studies.

277. Seminar in American Foreign Policy
(4) PHILPOTT

Contemporary issues in U.S. foreign policy.

279. Social and Cultural Basis of Political Change
(4) LIU

In-depth study of the political cultural basis of political systems and changes. Topics include: political culture, nationalism and ethnicity, and religion and politics.

280A. Domestic Politics of the Soviet Union and Successor States
(4) KAPLAN

Prerequisite: Political Science 230.

Selected topics seminar focusing on new research on the domestic politics of the former Soviet Union and the successor states. Issues regularly included are: the process of political change, democratiziation, ethnic politics, political structure, and economic reform.

280B. Foreign Policy of the Soviet Union and Successor States
(4) KAPLAN

Attention on recent works on foreign policies of the former Soviet Union and the successor states. Examination of methodological and substantive issues. Topics include: strategic theory, East-West relations, trade and the monetary system, and relations among states of the former Soviet Union.

281. Comparative Ethnic Politics
(4) KAPLAN

Examines the political consequences of ethnicity and theoretical approaches involved in the study of ethnic politics. Issues addressing problems of multi-ethnic states will be examined in light of cases drawn from the industrialized democracies, developing world, and the successor states of the Soviet Union.

282A. Comparative Politics and Latin America
(4) LOPEZ-ALVES
A critical examination of theories of comparative politics and their application to Latin America. Success and failure cases are compared and placed in the context of the world economy.

282B. The Economy and the Polity in Latin America
(4) LOPEZ-ALVES
The focus of this course is on the linkage between economics and politics. Several theories of development are tested in terms of their capacity to predict political outcomes in Latin America. The course also examines other cases outside the Latin America area.

282C. The Modern Mexican Political System
(4) BRUHN
Course is designed to facilitate theoretical analysis of the primary institutions and issues in Mexican politics. Focuses on the political economy of twentieth-century Mexico. Knowledge of theories of the political economy of developing nations helpful but not required.

283A. Seminar in Western European Politics
(4) ADAMS
Political modernization, government structures, parties and elections of Western European political systems, with emphasis on Great Britain, France, Italy, and Germany.

283B. Seminar in Western European Politics
(4) ADAMS
Contemporary and historical changes in West European systems, particularly Britain's social and political transformations (1939-1946) and the Thatcher period, France (1939-1947) and the Mitterand years, Germany's Weimer and Bonn republics, German unification (1989-1994), and others.

285. Comparative Asian Political Developments
(4) LIU
This seminar will compare political developments in China, India, Southeast Asia, and East Asian NIC's, focusing on political culture, elites and institutions, social structure, and socioeconomic changes.

286. Seminar in Japanese Politics
(4) FREEMAN
Structure and processes of policymaking in contemporary Japan, with focus on economic and social issues. Policy issues and policymaking cases, probing both the formal and informal rules of the game, its major actors, and its beneficiaries and victims.

288. Seminar in Revolution and Violence
(4) BRUHN, LIU
Prerequisite: graduate standing.
A critical examination of the theory and practice of revolution and political violence.

289. Seminar in Theories of Political Development
(4) BRUHN
Prerequisite: graduate standing.
The purpose of this seminar is to critically review several representative approaches and paradigms in the study of "political development." It is a scope- and method-seminar in which emphasis is on breadth rather than on depth.

290. Seminar in the Study of Public Organizations
(4) BRUHN, MCDONNELL
An introduction to the major theoretical approaches that can be used to understand public bureaucracies, from the early foundations of organization theory to the new institutional economics. Substantive topics include decisionmaking within public organizations and relations with legislatures and constituent groups.

291. Seminar in Public Administration and Public Policy
(4) MCDONNELL
Prerequisite: graduate standing.
This seminar considers the relationship between public administration and public policy. Topics include policy implementation, policy evaluation, and the political environment of administrative policy-making.

292. Problems in Political Economy
(4) WOOLLEY
Reviews selected issues in political economy. Theoretical topics include the collective action problem, the prisoner's dilemma game, the logic of two-level or "nested" games, and the development and effects of institutions. Substantive topics emphasize advanced industrial societies.

294. Environmental Politics and Policy
(4) WYNER
This seminar focuses on development of the environmental movement in American politics and the resulting institutional responses. Environmental policy making and implementation is examined in light of relevant theories. Emergence of an environmental ethic in American politics will be considered.

295. Politics of Education
(4) MCDONNELL
Same course as Education 241A.
Examination of the relationship between politics and education in a democratic society. Focus on the role of politics in defining the public purposes of education, determining its content and distribution, and in holding educators accountable to the larger body politic.

297. The Analysis of Public Policy
(4) MCDONNELL, WOOLLEY
Prerequisite: Political Science 205.
A survey of different traditions of policy analysis. Includes methods of analysis, policy alternatives, and approaches to explaining policy choice.

500. Practicum for Teaching Assistants
(2-4) STAFF
No unit credit allowed toward advanced degree.
Designed to help teaching assistants learn effective teaching methods and techniques under faculty supervision. Assignments normally include conducting discussion sections, grading examinations under the supervision of appropriate faculty members and discussion of relevant pedagogical problems.

501A-B. Teaching Assistant Training
(2-2) STAFF
A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Political Science 501B.
Designed to help graduate students prepare for future assignments as teaching assistants. Coursework normally includes discussions with faculty members and past or current teaching assistants, attendance at demonstration exercises, analysis of teacher performance with the use of audio-visual aids, etc.

502. Practicum for Teaching Associates
(2-4) STAFF
No unit credit allowed toward advanced degree.
Designed to help beginning teaching associates improve and refine their teaching methods, techniques and materials through discussions with appropriate members of the regular faculty. The format of the course may vary according to the specific needs of the teaching associates.

503. Directed Research
(2-4) STAFF
Students enrolled in this course will engage in research on relevant specialized subjects under the supervision of appropriate faculty members. Assignments normally include extensive work with the literature, participation in fieldwork where appropriate, and assistance with preparation of professional papers.

504. Supervised Internship in Public Policy
(2-8) STAFF
This is a supervised internship designed to provide graduate students with a means to pursue research on the policymaking process through participation in the formulation and/or implementation of policy in the field.

594AA-ZZ. Special Topics
(1-4) STAFF
Special seminar on research subjects of current interest.

595A-B-C. Group Studies
(2-2-2) STAFF
Current topics in the field of political science.

596. Directed Reading and Research
(2-6) STAFF
Individual tutorial. Instructor is usually student's major professor. A written proposal for each tutorial must be approved by the department chair and filed with the Graduate Division.

597AA-ZZ. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations
(1-12) STAFF
No unit credit allowed toward advanced degree.

598AA-ZZ. Master's Thesis Research and Preparation
(1-12) STAFF
No unit credit allowed toward advanced degree.

599AA-ZZ. Ph.D. Dissertation Research Preparation
(1-12) STAFF

Probability and Statistics

For probability and statistics faculty, program information, and courses, see Statistics and Applied Probability.

Psychology

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Faculty

F. Gregory Ashby, Ph.D., Purdue University, Professor (cognitive neuroscience, categorization, attention, decision processes in perception and cognition, mathematical psychology)

James J. Blascovich, Ph.D., University of Nevada, Reno, Professor (social psychophysiology, challenge and threat motivation, immersive virtual environments as a research tool)

David H. Brainard, Ph.D., Stanford University, Professor (human vision, machine vision, computational modeling)

Daphne B. Bugental, Ph.D., UC Los Angeles, Professor (social development, social cognition and affect, social interaction)

Harry J. Carlisle, Ph.D., University of Washington, Professor (physiology of motivation: regulation of hunger, thirst, and temperature)

Nancy L. Collins, Ph.D., University of Southern California, Assistant Professor (close relationships, interpersonal perception, social support, health psychology)

Leda Cosmides, Ph.D., Harvard University, Associate Professor (evolutionary psychology, cognition, domain-specific reasoning)

Aaron Ettenberg, Ph.D., McGill University, Professor (behavioral neuroscience, psychopharmacology, neurobiology of drug abuse, biological basis of reinforcement and motivation)

Alan J. Fridlund, Ph.D., University of Mississippi, Associate Professor (social interaction, evolution and neurology of social behavior, social psychophysiology, sexology, psychopathology)

David L. Hamilton, Ph.D., University of Illinois, Professor (social cognition, stereotypes, person perception, attribution processes)

Mary Hegarty, Ph.D., Carnegie-Mellon University, Associate Professor (comprehension, reasoning, spatial cognition, individual differences)

Arturo E. Hernandez, Ph.D., UC San Diego, Assistant Professor (psycholinguistics, cognitive aging, cognitive neuroscience)

Gerald H. Jacobs, Ph.D., Indiana University, Professor (biology of mammalian vision)

Stanley B. Klein, Ph.D., Harvard University, Professor (social cognition, mental representation of self, memory)

Hal S. Kopeikin, Ph.D., UC Los Angeles, Lecturer (personality change and measurement, psychotherapy, psychopathology, close relationships)

Deborah Levine-Donnerstein, Ph.D., University of Wisconsin, Madison, Lecturer (ethnic/racial social distance, discourse analysis, educational assessment, organizational decision making)

Jack M. Loomis, Ph.D., University of Michigan, Professor (visual space perception, auditory space perception, spatial behavior, spatial cognition, virtual environments)

Loy D. Lytle, Ph.D., Princeton University, Professor (developmental psychopharmacology; behavioral neuroscience; nutrition, brain function and behavior; pain and its alleviation)

Diane M. Mackie, Ph.D., Princeton University, Professor (intergroup processes, persuasion, social influence, affect, social perception)

Brenda N. Major, Ph.D., Purdue University, Professor (prejudice and self-esteem, coping with stress, social justice)

Richard E. Mayer, Ph.D., University of Michigan, Professor (human learning, problem-solving, educational psychology, human-computer interaction, multimedia learning, mathematical and scientific reasoning)

Deborah H. Olster, Ph.D., University of Michigan, Professor (neuroendocrinology, energy balance and reproduction, sexual maturation)

Benjamin E. Reese, D.Phil., University of Oxford, Professor (development and organization of the visual system, developmental neurobiology and neuroplasticity)

Russell Revlin, Ph.D., Carnegie Mellon University, Associate Professor (reasoning, psycholinguistics, cognitive neuroscience)

A. Robert Sherman, Ph.D., Yale University, Senior Lecturer with Security of Employment (cognitive-behavioral psychotherapy)

Emeriti Faculty

Gerald S. Blum, Ph.D., Stanford University, Professor Emeritus (cognitive and affective processes, experimental psychodynamics, hypnosis)

John W. Cotton, Ph.D., Indiana University, Professor Emeritus (experimental design, mathematical learning theory, computer simulation of psychological processes)

John M. Foley, Ph.D., Columbia University, Research Professor (pattern vision, visual space perception) Professor Emeritus

Walter C. Gogel, Ph.D., University of Chicago, Professor Emeritus (visual perception, psychophysics, perceptual development)

Howard H. Kendler, Ph.D., University of Iowa, Professor Emeritus (philosophy and history of psychology, theoretical psychology, conceptual development)

Tracy S. Kendler, Ph.D., University of Iowa, Professor Emerita (cognitive development)

Elijah P. Lovejoy, Ph.D., University of Pennsylvania, Lecturer Emeritus (intercultural psychology)

David M. Messick, Ph.D., University of North Carolina, Professor Emeritus (social psychology, decision making)

Robert W. Reynolds, Ph.D., University of Buffalo, Professor Emeritus (physiology, biochemistry, and endocrinology of motivation and emotion)

Affiliated Faculty

Larry Beutler, Ph.D. (Education)

Edward Donnerstein, Ph.D. (Communication)

Richard P. Duran, Ph.D. (Education)

Steven K. Fisher, Ph.D. (Neuroscience Research Institute and Molecular, Cellular, and Developmental Biology)

Howard Giles, Ph.D. (Communication)

Hsiu-Zu Ho, Ph.D. (Education)

Sehee Hong, Ph.D. (Education)

Charles H. Markham, M.D. (Department of Neurology, UCLA School of Medicine)

Diane McClure, Ph.D., D.V.M. (Campus Veterinarian)

Daniel R. Montello, Ph.D. (Geography)

John Tooby, Ph.D. (Anthropology)

The psychology curriculum at UCSB is designed to provide students with an appreciation of the scientific study of behavior. Psychology represents an extremely broad discipline, ranging from the study of behavior of the simplest organisms to the behavior of humans and groups of humans in complicated situations.

Students interested in one of the psychology majors are urged to examine the upper-division course offerings to see if these are consonant with their interests in psychology. As students will note, some topics are not currently included in the curriculum (e.g., humanistic psychology, industrial psychology, ethnic psychology, etc.) and the number of courses within any particular area, such as clinical applications, is limited. Nevertheless, a well-balanced selection of the available courses should provide students with a broad background in psychology, as well as appropriate preparation for those seeking to pursue graduate training later on.

On the undergraduate level, the department offers the B.A. degree in psychology and the B.S. in biopsychology. The bachelor of arts degree in psychology is recommended for students interested in obtaining a liberal arts education and understanding contemporary issues in psychology. The broad nature of the discipline allows students to complete the major by either specializing in a given substantive area (e.g., cognition, social psychology, perception, biopsychology) or selecting a more general and varied set of courses. The bachelor of science degree in biopsychology is intended for students who are interested in issues of neuroscience and behavior. Students complete courses providing an overview of the physical sciences (biology, physics, chemistry) and, in the upper division, focus specifically on the scientific study of behavior and its relationship to brain function. This major is recommended for students who have an interest in laboratory research and are considering a career in the field. It also provides strong preparation for many other professions, including the health-related sciences (requiring graduate work leading to the M.D. or Ph.D. degrees, for example). Graduate training consists primarily of work leading to the degree of doctor of philosophy. However, under special circumstances application can be made to a terminal master of arts program.

The departmental advisors, including academic peer advisors, a staff undergraduate advisor, and faculty advisors provide students with academic information and advice as well as assistance with career and graduate school preparation. Students are encouraged to become acquainted with faculty members and to consult with them about programs or academic plans.

Psychology majors are encouraged to join Psi Chi, the Santa Barbara chapter of the National Honor Society in Psychology. Membership information is available from the undergraduate advisor.

Students with a bachelor's degree in psychology who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Undergraduate Honors Program

The Department of Psychology has a four-year honors program to augment the existing program in the College of Letters and Science. Enrollment in the psychology honors program is by petition to the department and is based upon academic achievement.

Students who are selected to participate will earn a wide variety of unique academic privileges. In addition to special honors seminar courses, honors students will be given extended library privileges, increased priority for class registration, and opportunities to enroll in graduate seminars.

The departmental program provides qualified students an opportunity for an in-depth and intellectually challenging study of psychology. The psychology honors classes, for example, will be restricted in size and will provide a level of discussion and participation not possible in traditional lecture classes. To help prepare for graduate training, honors students will conduct independent research under the supervision of a faculty advisor. The results of this research will form the basis of the honors thesis, which each student will be required to submit before the end of the senior year.

Students interested in participating in the psychology honors program should see the Department of Psychology's undergraduate advisor for further information.

Undergraduate Program

Bachelor of Arts—Psychology

The requirements for this major can be fulfilled with a variety of courses, allowing students to specialize in a given area, or select a more varied set of courses. Students in this major who plan to enroll in graduate programs should consult an advisor.

Students who complete the psychology major enter a variety of careers and graduate programs including experimental psychology, social work, applied psychology, education, business administration, law, and recreation. It is important to keep in mind that many of these professional careers require training beyond the undergraduate level and students with such interests should discuss their plans with an advisor as early as possible.

Students who do not enter the university as pre-psychology majors may declare the pre-psychology major after completing Psychology 1 with a grade of C or better. Once students have successfully completed all pre-major requirements (see "Preparation for the major," below), they may petition for full major status in the Department of Psychology Undergraduate Affairs Office. Generally, students should have attained full major standing prior to the completion of 130 units. Admission to the pre-major does not guarantee admission to the full major.

Preparation for the major. Students must complete each of the following requirements before petitioning the department to change from pre-major to major status: (1) Psychology 1, 5, and 7; (2) Mathematics 34A or equivalent; (3) one science course from two of the following five areas:

A. EEMB 20 or MCDB 20 or Natural Science 1C;
B. EEMB 23 or EEMB 25 or MCDB 25;
C. Natural Science 1B;
D. Physics 10 or Natural Science 1A;
E. Computer Science 5AA-ZZ.

In completing the six preparatory courses described above, students must fulfill the following criteria: (a) the courses must be completed with a combined grade-point average of 2.75 or better; (b) in no preparatory course can there be a grade lower than C-; (c) a grade of C- cannot be obtained in more than one of the six preparatory courses; (d) none of the preparatory courses can be taken P/NP; and (e) in the calculation of the student's pre-major grade-point average, the student's highest two science requirement grades shall be used if more than two are completed. Students will not be permitted to enroll in upper-division psychology courses numbered 110 or higher without first completing the pre-major.

Upper-division major. A total of 36 upper-division psychology units are required, distributed as follows: four courses from Psychology 100-109, and 20 units of psychology courses numbered 110-199. A maximum of 12 units may be applied to the major from Psychology 197A-B-C, 198, and 199.

Bachelor of Science—Biopsychology

The biopsychology major is designed for students interested in an intensive study of the relationship between biological and behavioral function. The required courses involve a study of neurophysiology and neuroanatomy; biochemical, endocrine, and pharmacological regulations in the central nervous system; and the behavioral and psychological data related to these topics. Students who do not enter the university as biopsychology majors may declare the biopsychology major after completing Psychology 1 with a grade of C or better, and a cumulative 2.0 grade-point average for all courses completed toward preparation for the major.

Preparation for the major. The following courses or their equivalents are required: Psychology 1; Psychology 7; MCDB 1A-AL; MCDB 1B, EEMB 2A, and either MCDB 1BL or EEMB 2L; Chemistry 1A-AL, 1B-1BL, 1C-1CL (or 2A-AL, 2B-BL, 2C-CL), 6A-B, 107A-B; Physics 6A-6AL, 6B-6BL, 6C-6CL; Mathematics 34A-B, and either Psychology 5 or PSTAT 5A. *Note: Psychology 106 is recommended for lower-division students who wish to enter the major. However, it may not be taken after or concurrently with Psychology 111.*

Upper-division major. Forty-four to 46 upper-division units are required, distributed as follows: (A) Psychology 111 (only offered during fall quarter); (B) two courses from the following: Psychology 110L, 111L, 116L, 137L, 169L; EEMB 126AL or MCDB 126AL; (C) five courses from the following: Psychology 110A or 110B or 110C, 113, 115, 122, 123, 125, 132, 133A, 133B, 137, 163AA-ZZ, 168, or 170; and (D) 12 units of upper-division psychology electives.

Students interested in pursuing a graduate education in biopsychology upon completion of the major are strongly advised to enroll in Psychology 111L as one of their two laboratory course requirements.

Careful planning is required for biopsychology majors to graduate in a timely fashion. Students in the major should consult with the undergraduate advisor regarding the frequency and timing of upper-division course offerings.

Passed/Not Passed Option Within the Major

Psychology and biopsychology majors are permitted to take a maximum of 8 units from the following courses on a passed/not passed basis to fulfill the major requirements for either of the psychology majors: Psychology 135A-B-C, 143P, 198, 199. Students who wish to take more than 8 units of the above courses or any other psychology courses on a passed/not passed basis may do so. However, such courses will not apply to the major requirements.

Graduate Program

Graduate training is provided in cognitive and perceptual sciences, developmental and evolutionary psychology, neuroscience and behavior, and social psychology. In addition to departmental requirements, candidates for graduate degrees must fulfill the university requirements described in the chapter "Graduate Education at UCSB."

Admission

Graduate training in the Department of Psychology consists primarily of work leading to the degree of doctor of philosophy. However, under special circumstances, application can be made for admission to a terminal master of arts program. Neither acceptance into nor successful completion of the terminal M.A. program will automatically provide admission into the Ph.D. program. Although academic background provided by an undergraduate B.A. or B.S. degree in psychology is desirable, outstanding students from other disciplines are strongly encouraged to apply.

In addition to departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB." Applications to Ph.D. and M.A. programs are

accepted with admission to begin fall quarter only. Requests for application materials will not be processed if received after December 4. All application materials (including the application, transcripts, Graduate Record Examination (GRE) scores for the general exam, statement of purpose, and letters of recommendation) are due to the Department of Psychology by January 1. It is important to indicate on the graduate application (under emphasis), the subdisciplinary program area (cognitive and perceptual sciences, developmental and evolutionary psychology, neuroscience and behavior, and social psychology) to which students are applying.

Master of Arts—Psychology

Degree Requirements

The following are the requirements for the M.A. in psychology for students in both the terminal M.A. and the Ph.D. programs. Students enrolled in the terminal M.A. program must satisfy the following departmental requirements: (a) masters-level performance in two statistics courses (Psychology 221A-B) and eight content courses (appropriate to the area of concentration), two of which include a breadth requirement; (b) satisfactory performance in research courses and area seminars; (c) satisfactory completion of a first year progress report, a master's thesis, and presentation of this research orally at the annual departmental mini-convention.

Work toward the M.A. is optional for applicants admitted to the Ph.D. program. Students enrolled in the Ph.D. program must satisfy all of the above requirements at the Ph.D. level of performance.

Neither acceptance into nor successful completion of the terminal M.A. program will automatically provide admission into the Ph.D. program. Terminal master's students must apply to the Ph.D. program and will be reviewed for possible admission with the applicant pool for that academic year.

Doctor of Philosophy—Psychology

Degree Requirements

Students enrolled in the Ph.D. program must satisfy the following departmental requirements: (a) doctoral-level performance in two statistics courses (Psychology 221A-B), eight content courses (appropriate to the area of concentration), two of which include a breadth requirement, and six additional courses (appropriate to the area of concentration); (b) satisfactory performance in research courses, area seminars and teaching seminars (Psychology 590A-B-C); (c) satisfactory completion of a first year progress report, a second year research paper equivalent to a master's thesis, and presentation of this research orally at the annual departmental mini-convention; (d) successful performance on a general candidacy examination, and oral qualifying examination; (e) completion of a public dissertation lecture, acceptable performance on the doctoral oral defense, and an acceptable doctoral dissertation; (f) satisfactory service as a teaching assistant.

Optional Ph.D. Emphasis in Cognitive Science

Students pursuing a Ph.D. in this department may petition to add an emphasis in cognitive science. The interdisciplinary program in cognitive science involves faculty from the Ph.D. programs in anthropology, computer science, education, English, electrical and computer engineering, geography, linguistics, psychology, and sociology. Its goal is to give students an appreciation of the interdisciplinary study of thinking, perception, and intelligent behavior, as determined jointly by the nature of the environment and by the internal architecture of the intelligent agent, whether human, animal, or machine. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in cognitive science must fulfill the following requirements in addition to the requirements of the Ph.D. in their home department: (1) participation for at least three quarters in proseminar Interdisciplinary 200; (2) completion of at least three cognitive science elective courses with one each in three different departments; (3) completion of either (a) a research project, completed before the dissertation, resulting in a publishable paper, or (b) an extramural grant proposal for a study in cognitive science suitable for submission to an identified granting agency; (4) presentation of a research paper in a suitable academic forum, such as an emphasis or departmental colloquium, or a professional meeting; and (5) a Ph.D. dissertation centrally focused on a question emerging from cognitive science with at least two committee members representing faculty participating in the cognitive science interdisciplinary emphasis.

Optional Ph.D. Emphasis in Human Development

Students pursuing a Ph.D. in this department may petition to add an emphasis in human development. The interdisciplinary program in human development (IHD) involves faculty from the Ph.D. programs in communication, counseling/clinical/school psychology, education, linguistics, psychology, and sociology. The program focuses on developmental theory and research across the lifespan, and may be particularly relevant to the dissertation research of some students. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in human development must fulfill the following requirements in addition to the requirements for the Ph.D. in their home department: (1) six quarters of proseminar Interdisciplinary 592; (2) four courses in addition to the proseminar, two of which must be outside the student's home department; (3) a minimum of one member of the student's doctoral committee must be a ladder faculty member officially affiliated with the interdisciplinary program in human development. Consult the department for additional information.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences

Students pursuing a Ph.D. in this department may petition to add an interdisciplinary emphasis in quantitative methods in the social sciences (QMSS). This new interdisciplinary emphasis involves faculty from the Ph.D. programs in communication, economics, education, geography, political science, psychology, sociology, and statistics and applied probability. The areas of specialization of the participating faculty include advanced regression modeling techniques, multivariate statistics, bootstrap estimation methods, demography, econometrics, psychometrics, social network theory, mathematical psychology, spatial statistics, survey research, and educational and psychological assessment. The QMSS emphasis helps students to attain the competencies needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methodologies, and participation in interdisciplinary colloquia and research projects.

Each admitted student will develop, with his or her advisor, an individual contract listing the QMSS requirements to be completed. The contract must include the following:

- Two quarters of calculus, one quarter in linear algebra, and a one-year statistics sequence (These requirements can be waived if equivalent courses have already been completed);
- Attendance for at least three quarters at the ongoing QMSS seminar series, including presentation of at least one paper;
- Completion of at least three quantitative methods courses (excluding those listed above) or at least two of which are outside the student's home department;
- A Ph.D. dissertation that is centrally focused on an issue that is appropriate to the QMSS emphasis. The dissertation may make a contribution to methodological theory or may involve an advanced or innovative application;
- A dissertation committee that includes at least one QMSS faculty member from outside the student's home department.

Consult the department for additional information.

Psychology Courses

LOWER DIVISION

These courses act as prerequisites for the majority of upper-division requirements and should be completed as early as possible.

1. General Psychology
(4) STAFF

The requirements of the course will include subject participation in low-risk psychological experiments or completion of a short paper.

An introduction to the subject matter and methods of psychology including the physiological basis of behavior, learning and memory, perception and cognition, social behavior and personality. (F,W,S,SS)

5. Introductory Statistics
(S) STAFF

Prerequisite: Mathematics 34A.

Not open for credit to students who have completed lower-division coursework in statistics.

Probability, frequency distributions, descriptive statistics, sampling distributions of the mean and variance, basic logic of inference, hypothesis testing for one sample, related samples, and independent samples, correlation and regression, simple non-parametric tests. (F,W,S,SS)

6. Intermediate Statistics with Computer Applications
(S) STAFF

Prerequisite: Psychology 5.

Furthers students' knowledge of statistical inference and its application to data using statistical computer software. Topics will include one-way analysis of variance, two-way analysis of variance, and non-parametric procedures.

7. Introduction to Experimental Psychology
(S) STAFF

Prerequisites: Psychology 1 and 5.

Introduction to the planning and execution of experiments in psychology and to the analysis and interpretation of data. (F,W,S,SS)

90A. First-Level Honors Seminar
(2) STAFF

Prerequisites: consent of instructor; concurrent enrollment in Psychology 1.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in Psychology 1. (F)

90B. First-Level Honors Seminar
(2) STAFF

Prerequisites: consent of instructor; concurrent enrollment in Psychology 5.

Students who have completed Psychology 90A have priority for enrollment.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in the course. (W)

90C. First-Level Honors Seminar
(2) STAFF

Prerequisite: consent of instructor; concurrent enrollment in Psychology 7.

Students who have just completed Psychology 90B have priority for enrollment.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in Psychology 7. (S)

91A-B-C. Second-Level Honors Seminar
(2-2-2) STAFF

Prerequisite: open to pre-psychology, psychology, and biopsychology honors students with consent of instructor.

An advanced seminar designed exclusively for honors students in the major. The course will involve reading and discussion of selected topics in psychology.

98. Readings in Psychology
(1-5) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum grade-point average of 3.0 and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Readings in psychology under the guidance of a faculty member in the department. Students wishing to enroll must prepare a short plan of study.

99. Independent Research in Psychology
(1-5) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum grade-point average of 3.0 and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent research in psychology under the guidance of a faculty member in the department. Students wishing to enroll must prepare a short plan of study.

UPPER DIVISION

101. Health Psychology
(4) BLASCOVICH

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

Introduction to concepts, theory, and research within the subdiscipline of health psychology. Relationships among behavioral factors, well being, and disease.

102. Social Aspects of Behavior
(4) KLEIN, MAJOR, COLLINS

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

An introduction to social psychology including person perception, attitude formation and change, interpersonal interactions, persuasion and influence, group processes, and social values.

103. Introduction to Psychopathology
(4) FRIDLUND, KOPEIKIN

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

Concepts of mental illness and mental disorder, including diagnosis, causes, treatments, cultural influences, and social consequences.

105. Developmental Psychology
(4) KOPEIKIN

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

An introduction to the scientific study of developmental processes, with particular focus on child development. Examination of basic research and theory in major areas of child psychology.

106. Brain and Behavior
(4) CARLISLE, JACOBS, LYTLE

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

May not be taken after or concurrently with Psychology 111 or 111L.

An examination of contemporary research and theory dealing with the relation between the brain and psychological variables.

107. Introduction to Perception
(4) LOOMIS

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

May not be taken after or concurrently with Psychology 110A or 110B or 110C or 110L or 118A.

An introductory course in perception open to students in all majors. A variety of demonstrations are used to allow the student to experience the phenomena of perception. Current hypotheses and theories concerning the underlying psychological and biological processes are described.

108. Introduction to Cognitive Psychology
(4) HEGARTY, REVLIN

Prerequisite: a prior lower-division course in psychology, or upper-division standing.

An elementary course in such topics as pattern recognition and attention, memory, language, reasoning, and problem solving.

110A. Perception: Vision
(4) BRAINARD

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

May not be taken concurrently with Psychology 107.

This course is an overview of visual perception. It covers a wide range of phenomena from the detection of simple stimuli to the identification of objects and events. Human performance, psychological theories, and biology will be considered.

110B. Perception: Audition
(4) ASHBY, LOOMIS

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

May not be taken concurrently with Psychology 107.

An overview of auditory perception covering topics such as the physics of sound, psycho-physical methods, the structure and function of the ear and auditory pathway, detection and discrimination, masking, pitch perception, musical scales, 3-D localization, and speech perception.

110C. Perception: Chemical Senses
(4) ASHBY

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

May not be taken concurrently with Psychology 107.

An overview of odor and taste perception. Topics include the chemistry of odors and foods, the structure and function of the olfactory and gustatory pathways, detection and identification, memory, animal and human pheromones, and influences on emotion and health.

110L. Laboratory in Perception
(S) BRAINARD

Prerequisites: Psychology 1, 5, 7; and, Psychology 110A or 110B or 110C or 132; open to psychology and biopsychology majors only.

A laboratory course that emphasizes experimental methods and data analysis techniques relevant to the study of sensation and perception.

111. Basic Concepts in Biopsychology
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Not open to students who have completed Psychology 106.

An overview of the basic biological mechanisms important for behavior. (F)

111L. Laboratory in Biopsychology
(S) CARLISLE

Prerequisites: Psychology 1, 5, 7 and 111; open to psychology and biopsychology majors only.

A study of the techniques and experimentation in biopsychology.

112L. Laboratory in Social Behavior
(S) MACKIE, HAMILTON, COLLINS

Prerequisites: Psychology 1, 5, 7 and 102; open to psychology and biopsychology majors only.

Methods, techniques, and typical experimental research in social psychology.

113. Regulatory Mechanisms in Biopsychology
(4) CARLISLE

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology, biopsychology, and physiology majors only.

An examination of homeostatic regulatory mechanisms important for behavior.

114. Personality
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

An introduction to theories of personality (e.g., psychodynamic, existential, humanistic, and social learning theories) with special attention to normal/abnormal development, the role of life situations in shaping personality, and to related experimental research.

114L. Laboratory in Personality
(S) SHERMAN

Prerequisites: Psychology 1, 5, and 7; and, Psychology 102 or 103 or 114; open to psychology and biopsychology majors only.

Topics of current interest in personality with concurrent experimentation, analysis of data, and preparation of laboratory reports.

115. Neuropharmacology of Psychoactive Drugs
(4) LYTLE

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology, biopsychology, and pharmacology majors only.

Recommended preparation: MCDB 126A or 126B or 126C or EEMB 164.

An examination of the pharmacological and neurochemical mechanisms influencing the actions of psychoactive drugs.

116L. Laboratory in Animal Learning
(S) ETTENBERG

Prerequisites: Psychology 1, 5, 7 and 111; open to

psychology and biopsychology majors only.

Methods, techniques, and typical experimental research in animal learning.

117. Human Memory
(4) HEGARTY KLEIN, REVLIN

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Recommended preparation: Psychology 108 .

Principles of human memory. How knowledge is represented internally. Cognitive processes involved in remembering. Examination of different memory systems.

117L. Laboratory in Human Memory and Cognition
(5) HEGARTY, REVLIN

Prerequisites: Psychology 1, 5, and 7; and, Psychology 117 or 118B; open to psychology and biopsychology majors only.

Methods, techniques, and typical experimental research in human memory and cognition.

121. Psychological Measurement
(4) KOPEIKIN

Prerequisites: Psychology 1, 5, and 7; upper-division standing; open to psychology and biopsychology majors only.

Consideration both of the theoretical foundations of psychological measurement, including problems of reliability, validity, norms, and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

122. Motivation
(4) ETTENBERG

Prerequisites: Psychology 1, 5, and 7; upper-division standing; open to psychology and biopsychology majors only.

Examination of the evolution of ideas concerning the determinants of human and animal behavior. Historical and contemporary theories of motivation are presented and evaluated in the light of recent research findings.

123. Cognitive Neuroscience
(4) HERNANDEZ

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Examination of the neurological basis of cognition. Material is drawn from research in psychology, clinical neurology, and the neurosciences with brain injured and healthy humans as well as non-human subjects. Topics covered include memory, language, and perception.

124. Educational Psychology
(4) MAYER

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

An introduction to research and theory on how instruction affects student learning. Topics may include: development of learning and thinking strategies, instructional methods, learning in subject matter areas, individual differences, and classroom processes.

125. Human Psychophysiology
(4) BLASCOVICH

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Introduction to concepts, theory and research within the subdiscipline of psychophysiology. This field is primarily devoted to understanding the relationships among behavioral and physiological processes.

126. Historical Foundations of Modern Psychology
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

127. Psychology of Language
(4) REVLIN

Prerequisite: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Recommended preparation: Psychology 108.

The psychological nature of linguistic theory; linguistic structure as a factor in learning, perception, and comprehension; language acquisition; multilingualism; models of language.

128. Human Thinking and Problem Solving
(4) HEGARTY, MAYER

Prerequisite: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Recommended preparation: Psychology 108.

An examination of theories and supporting evidence regarding the nature of human thought processes.

129. Cognitive Behavioral Approaches to Psychotherapy
(4) SHERMAN

Prerequisites: Psychology 1, 5, and 7; and Psychology 102 or 103 or 114; open to psychology and biopsychology majors only.

An introduction to the basic principles and methods of behavior modification, including desensitization, operant conditioning, social modeling, expressive training, and aversion therapy. Related discussion concerning the identification of maladaptive behavior, the specification of treatment operations, and the criteria for assessing therapeutic change.

130. Visual System Analysis
(4) STAFF

Prerequisite: upper-division standing.

Same course as ECE 177.

Recommended preparation: calculus, linear algebra and some computer programming experience.

A systems approach to understanding vision. Topics will typically include transduction, signal detection, space and motion perception, color vision, and pattern classification. Special emphasis will be placed on comparing computational models with quantitative descriptions of human visual performance.

132. Visual Neuroscience
(4) JACOBS

Prerequisites: Psychology 1, 5, and 7; and, Psychology 106 or 111; and MCDB 1A-AL; and, MCDB 1B-BL or EEMB 2-2L; open to psychology and biopsychology majors only.

An examination of the neural basis of vision. The course focuses on mammalian vision and considers evidence from behavioral and biological approaches.

133. Psychopharmacology: Psychotherapeutic Drugs
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; and Psychology 111 or 115 or MCDB 126A or MCDB 126B or MCDB 126C; open to psychology, biopsychology, and pharmocology majors only.

Not open for credit to students who have completed Psychology 133A.

Recommended preparation: Psychology 115.

An introduction to the biochemical, physiological, and behavioral effects of medically useful, psychoactive drugs.

134. Psychopharmacology: Drugs of Abuse
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; and Psychology 111 or 115 or MCDB 126A or MCDB 126B or MCDB 126C; open to psychology, biopsychology, and pharmocology majors only.

Not open for credit to students who have completed Psychology 133B.

Recommended preparation: Psychology 115.

An introduction to the biochemical, physiological, and behavioral effects of self-administered, psychoactive drugs.

135A-B-C. Field Experience in Psychological Settings
(4-4-4) SHERMAN

Prerequisites: Psychology 1, 5, and 7; and, Psychology 103 or 114 or 129; senior standing; open to psychology or biopsychology majors only; consent of instructor.

Psychology 135A and 135B must be taken in sequence, while continuation in Psychology 135C is optional. Since enrollment is limited, interested students are advised to contact the instructor during the spring quarter prior to the fall quarter in which they intend to enroll.

Supervised field experience in settings providing psychological services with opportunities for observation and participation. Students will spend approximately six hours per week in psychological settings, attend weekly class meetings, read related materials, and prepare written reports. (F,W,S)

137. Behavioral Endocrinology
(4) OLSTER

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology, biopsychology, and pharmacology majors only.

Introduction to the role of hormones in the regulation of behavior. Focus on the neural and/or cellular mechanisms underlying the effects of hormones on various behaviors (e.g. reproduction, ingestion, aggression, rhythmicity).

137L. Laboratory in Behavioral Endocrinology
(5) OLSTER

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology and biopsychology majors only.

Exploration of the laboratory techniques and methodologies used to study the neural bases of hormonally-influenced behaviors.

138. Social Perception
(4) HAMILTON, KLEIN, COLLINS

Prerequisites: Psychology 1, 5, 7, and 102; open to psychology and biopsychology majors only.

Review of research and theory in social perception and its influence on interpersonal relationships, including impression formation, attribution theory, self-perception, friendship formation and courtship.

140. Social Influence
(4) MACKIE

Prerequisites: Psychology 1, 5, 7, and 102; open to psychology and biopsychology majors only.

Review of research and theory of social influence with particular emphasis on attitude formation and change through persuasion, compliance, conformity, and the relationships between affective, cognitive, and behavioral processes.

142. Cognitive Development
(4) COSMIDES

Prerequisites: Psychology 1, 5, 7, and 105; open to psychology and biopsychology majors only.

Development of cognition from birth to maturity. Piagetian, Soviet, and information processing theories and research. Primary emphasis on normal human development; secondary emphasis on abnormal and animal cognition. Infant perception and cognition, early childhood competencies, cognitive underpinnings of academic skills.

143. Human Relationships and Their Origins
(4) BUGENTAL

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Not open for credit to students who have completed Psychology 104.

An interdisciplinary approach to human relationships and their origins. Focus on relevant biological, developmental, and social psychological theory and research.

143P. Practicum in Social Development
(5) BUGENTAL

Prerequisites: Psychology 1, 5, 7, and 143; concurrent enrollment in Psychology 143S; senior standing; open to psychology and biopsychology majors only; consent of instructor.

Field experience in conjunction with Psychology 143S. Students work under the supervision of an appropriate staff member at a local agency four half-days a week. Focus on developmental problems.

143S. Seminar in Social Development
(3) BUGENTAL

Prerequisites: Psychology 1, 5, 7, and 143; concurrent enrollment in Psychology 143P; senior

standing; consent of instructor; open to psychology and biopsychology majors only.

Course work in conjunction with Psychology 143P. A weekly three-hour seminar dealing with social, emotional, and behavioral problems in childhood. Each student writes and presents a paper on a relevant topic.

144. Emotion and Thought
(4) STAFF

Prerequisites: Psychology 1, 5, 7, and 102; open to psychology and biopsychology majors only.

Exploration of theory and research concerning the nature and experience of emotion. The influence of emotions and mood states on how people think and behave in a social context.

147. Intergroup Relations
(4) HAMILTON

Prerequisite: Psychology 1, 5, 7, and 102; open to psychology and biopsychology majors only.

Review of social psychological theory and research relevant to intergroup relations. Topics may include social categorization, stereotyping, prejudice, discrimination, and intergroup conflict and cooperation.

148. The Psychology of Self
(4) KLEIN, MAJOR

Prerequisites: Psychology 1, 5, 7, and 102; open to psychology and biopsychology majors only.

Examination of the self from social and cognitive perspectives. Topics will include: (a) how we come to know who we are and what we are like, (b) how we structure knowledge about the self in our minds, and (c) how we use this self-knowledge to guide and direct our behavior.

150. Advanced Analysis of Data in Psychology
(5) STAFF

Prerequisites: Psychology 1, 5, and 7; upper-division standing; open to psychology and biopsychology majors only.

Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of quantitative data in psychology.

152. Spatial Perception and the Control of Action
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

May not be taken concurrently with Psychology 107.

A course on the perception of three-dimensional space with an emphasis on vision. Review of the primary experimental and theoretical approaches and examination of the link between space perception and the control of complex spatial behavior (e.g., grasping, walking, and driving).

155. Evolution and Cognition
(4) COSMIDES

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only.

Explores ways in which the human mind can be seen as a collection of devices designed by evolution to solve adaptive problems faced by our hunter-gatherer ancestors. Topics may include cooperation, mating, sibling jealousy, coalitional aggression, etc.

156. Environmental Perception and Cognition
(4) MONTELLO

Prerequisites: Psychology 1, 5, and 7; and, Geography 5; and, Geography 105 or Psychology 107 or 108; open to psychology and biopsychology majors only.

Same course as Geography 153C.

Research and theory on human perception and cognition of environments. Topics include spatial perception, spatial learning, knowledge structures, navigation and wayfinding, language and spatial cognition, map use, the spatial skills of special populations, and other issues.

160AA-ZZ. Special Topics in Psychology
(4) STAFF

Prerequisites: Psychology 1, 5, and 7; open to psychology and biopsychology majors only; consent of instructor.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Lectures in special areas of interest in contemporary psychology. Consult the department office regarding proposed course topics.

163AA-ZZ. Contemporary Issues in Biopsychology
(4) STAFF

Prerequisites: Psychology 1, 5, 7, and 111; upper-division standing; open to psychology and biopsychology majors only; consent of instructor.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

An examination of special topics of current importance in biopsychology. Content will vary. Information on content may be obtained in the department office.

168. Development and Plasticity of the Brain
(4) REESE

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology and biopsychology majors only.

Recommended preparation: MCDB 114.

An examination of the major developmental events producing the organization and connectivity of the nervous system.

169L. Laboratory in Neuroanatomy
(5) REESE

Prerequisites: Psychology 1, 5, and 7; and, Psychology 111 or MCDB 114 (either may be taken concurrently); open to psychology and biopsychology majors only.

A combined laboratory/lecture course examining the organization and connectivity of the mammalian nervous system. Topics covered will include neurohistological techniques; neurology and neuropsychology; comparative neuroanatomy.

170. Nutrition and Behavior
(4) LYTLE

Prerequisites: Psychology 1, 5, 7, and 111; open to psychology and biopsychology majors only.

Not open for credit for students who have completed Psychology 163LN.

Explores the inter-relationships among nutrients, nervous system function, and behavior. Topics may include biochemistry of macro-and micro-nutrients; malnutrition and behavior; megavitamin and super-nutrition pharmacology; eating behavior disorders.

196H. Honors Seminar in Psychology
(4) STAFF

Prerequisites: upper-division psychology and biopsychology majors only; 4 prior upper-division courses in psychology; consent of instructor.

Students must have a minimum 3.5 overall grade-point average, and a minimum 3.5 upper-division psychology major grade-point average. All qualified students will be invited to apply in the psychology office at the end of fall quarter. Students not meeting the minimum requirements may be nominated by a member of the faculty. All final decisions for enrollment will be made by the coordinator of the seminar.

A series of weekly meetings with individual faculty representing diverse areas within psychology. Background readings are required for each meeting. Full participation in the seminar is required. (S)

197A-B-C. Honors Research in Psychology
(4-4-4) STAFF

Prerequisites: Psychology 196H; consent of department.

Students enrolled in the Education Abroad Program during their junior year and, hence, unable to take Psychology 196H may still be permitted to enroll; please see department undergraduate advisor. Psychology 197A-B-C is a three-quarter sequence course with the final grade issued upon completion of 197C. No more than 12 units of Psychology 197A-B-C, 198, and 199 may be applied toward fulfilling major requirements.

Independent study under supervision of faculty member, involving either design and execution of independent research project or scholarly analysis and critique of theoretical and research literature pertaining to substantial issues. Honors thesis qualifies student for distinction in major upon graduation. (F,W,S)

198. Readings in Psychology
(1-4) STAFF

Prerequisites: open only to psychology and biopsychology majors; upper-division standing; completion of two upper-division courses in psychology; consent of department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. No more than 12 units combined of Psychology 197A-B-C/198/199 courses may be applied toward the psychology and biopsychology major.

Readings in psychology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

199. Independent Research in Psychology
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in psychology; consent of department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 total in all 98/99/198/199/199RA courses combined. Psychology 199 courses are limited to no more than 4 units in one quarter. No more than 12 units combined of 197A-B-C/198/199 courses may be applied toward fulfilling psychology and biopsychology major requirements.

Independent research under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study for their research.

GRADUATE COURSES

Graduate standing in psychology or consent of instructor is prerequisite to all graduate offerings unless otherwise noted.

211L. Laboratory in Biopsychology
(4) OLSTER

Prerequisite: Psychology 229.

Strongly recommended for graduate students in biopsychology.

A study of the techniques and experimentation in biopsychology. Offered concurrently with Psychology 111L, but graduate students must complete and independent research project in consultation with the instructor.

213. Regulatory Mechanisms in Biopsychology
(4) CARLISLE

Prerequisites: graduate standing; consent of instructor.

An examination of the homeostatic regulatory mechanisms important for behavior.

215. Neuropharmacology of Psychoactive Drugs
(4) LYTLE

Prerequisites: graduate standing; consent of instructor.

An examination of the pharmacological and neurochemical mechanisms influencing the actions of psychoactive drugs.

219. Behavioral Pharmacology
(4) ETTENBERG

An examination of the application of behaviorist learning principles to the study of pharmacology. Topics include the development of behavioral screens for psychotherapeutic drugs, research models of substance abuse, behavioral profiles of psychoactive drugs, and drug discrimination techniques.

221A. Design and Measurement
(4) ASHBY

Prerequisite: graduate standing in psychology.

Recommended preparation: a course in calculus.

Experimental design and statistical analysis in psychological research. Includes basic probability,

sampling and distribution theory, hypothesis testing, and estimation.

221B. Design and Measurement
(4) ASHBY

Prerequisite: Psychology 221A.

Experimental design and statistical analysis in psychological research. Analysis of variance and related topics.

221C. Multivariate Analysis in Psychology and Related Social Sciences
(4) STAFF

Prerequisites: Psychology 221A-B.

The use in psychology of the general linear model, multiple regression, discriminant function analysis, factor-analysis, and principal components analysis.

226. Cognitive Development
(4) COSMIDES

Discusses the concept of cognitive development, its psychobiological basis, and representative psychobiological, information-processing, Piagetian, and linguistic theories of cognitive development.

227. Human Memory and Cognitive Processes
(4) REVLIN, HEGARTY

Survey of theoretical approaches and empirical findings in the areas of learning, memory, psycholinguistics, and cognitive processing. Topics include structure and process models of memory, nature of the information-processing approach, and related experimental methodology and findings.

228. Perception
(4) BRAINARD

Analysis of psychophysical relations in sensory processes with stress on detection, scaling, discrimination, spatial and temporal resolution, and the interaction of cue systems in perceptual behavior.

229. Physiological Psychology
(4) STAFF

Examination of neural and endocrine mechanisms underlying vertebrate motivational systems.

230. Psychophysiology of Vision
(4) JACOBS

Consideration of the physiological and psychophysical data bearing on the major features of vision in vertebrates.

231. Cognitive Neuroscience
(4) STAFF

Examination of the neurological basis of cognition with material from research in psychology, neurology, and the neurosciences with brain injured and healthy humans and non-humans subjects. Topics include memory, language, and perception.

233A. Psychopharmacology
(4) LYTLE

An introduction to the biochemical, physiological, and behavioral effects of psychoactive drugs. Offered concurrently with Psychology 133A, but graduate students will be required to complete additional reading and writing assignments.

233B. Psychopharmacology
(4) LYTLE

A continued examination of the biochemical, physiological, and behavioral effects of psychoactive drugs. Offered concurrently with Psychology 133B, but graduate students will be required to complete additional reading and writing assignments.

234. Language and Text Comprehension
(4) HEGARTY, REVLIN

Prerequisite: consent of instructor.

This course covers theoretical and empirical accounts of the psychological processes underlying language and text comprehension, from low level processes (e.g., word recognition) to higher levels (e.g., inference). Representative topics involve models of text comprehension, individual differences, and comprehension of technical text.

235. Neuroendocrinology
(4) OLSTER

Prerequisites: graduate standing; consent of instructor.

Focus on the regulation of hormone secretion by the central nervous system and on the neural mechanisms underlying hormonal effects on the behavior/physiology of the whole organism.

237. Cognition
(4) MAYER

An in-depth analysis of advanced topics in human cognition. The course will include discussion of the cognitive processes involved in areas such as human thinking, problem solving, memory, and learning.

238. Social Perception
(4) HAMILTON, KLEIN

Review of current research in person perception, social categorization, and social judgment.

239. The Social Psychology of Intergroup Relations
(4) HAMILTON, MACKIE

Prerequisite: consent of instructor.

Surveys the major social psychological theories of intergroup relations and the social psychological processes that facilitate intergroup conflict and its reduction.

240. Social Influence
(4) MACKIE

Course covers the goals of social influence, the major cognitive, motivational, and associationistic theories of attitude change, conformity, and the attitude/behavior relationship.

241. Theory in Social Psychology
(4) STAFF

Prerequisite: consent of instructor.

Course will explore selected topics in social psychology, with emphasis on theoretical development and the role of the theorist in determining scientific progress.

242. Social Psychophysiology
(4) BLASCOVICH

This course will familiarize students with advanced topics in psychophysiology as applied to social psychological issues. The course will cover topics including: the evolution of social psychophysiology, the nature of physiological indices, theoretical background, and methodological techniques.

246. Social Stigma
(4) MAJOR

Course addresses classic and contemporary theory and research on the psychology of stigma. Emphasis is on experience of members of stigmatized groups. Issues covered will include affective, cognitive, motivational, and social interaction consequences of stigma.

248. The Self and Social Psychology
(4) KLEIN, MAJOR

This course examines the self from a social cognition perspective. Topics include the basis for self-knowledge, the mental representation of self-knowledge, and the effects of this knowledge on behavior.

249. Social Development
(4) BUGENTAL

Prerequisite: undergraduate course in developmental psychology.

Course will cover the application of biological, cognitive developmental, and social cognition approaches to social development in infancy and childhood. Topics will include: attachment processes, emotional development, social inference development, moral development, gender role development, and developmental psychopathology.

252. Advanced Research Methods in Social Psychology
(4) BLASCOVICH

Introduction to philosophy of science, advanced experimental designs, specific methodologies, methodological problems.

260. Historical Foundations of Modern Psychology
(4) FRIDLUND

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

262. Formal Models
(4) ASHBY

Prerequisite: graduate standing.

This course concentrates on mathematical models for behavior. Several specific models and programs are discussed in detail, and these formal theories are compared with more informal, verbal theories.

263. Computer Simulation of Cognitive Processes
(4) REVLIN

Prerequisite: graduate standing.

Review of research and techniques in computer simulation of intelligent behavior. Processes considered include thinking, learning, understanding, problem-solving, and intelligent tutoring. Techniques include advanced languages, control structures (pattern-directed and goal-directed), knowledge structures (declarative vs. procedural).

264. Dynamic Systems in Psychology
(4) ASHBY

Prerequisites: Psychology 221A-B.

Quantitative and qualitative analysis of linear and nonlinear dynamical systems in psychology; state space representations; stability, controllability, and observability of linear systems; phase flow and equilibrium analysis of nonlinear systems; applications to neural networks and other connectionist models.

268. Development and Plasticity of the Brain
(4) REESE

An examination of the major developmental events producing the organization and connectivity of the nervous system. Offered concurrently with Psychology 168, but graduate students will be required to complete additional reading and writing assignments.

269. Neuroanatomy
(4) REESE

An examination of the organization of the vertebrate nervous system. Topics include neurohistological techniques; neurology and neuropsychology; comparative neuroanatomy; neural degeneration; developmental neuroscience.

590A-B-C. Seminar on Teaching of Psychology
(1-1-1) SHERMAN

Prerequisite: open to psychology students with graduate standing; seminar is required of all new teaching assistants in the Department of Psychology.

Seminar designed to prepare psychology graduate students for various roles related to the teaching of undergraduate psychology courses. Topics may include leading discussions, preparing and grading exams, conferencing, evaluating writing, ethical issues, lecturing effectively, and using audio-visual aids.

591. Practicum in the Teaching of Psychology
(1) STAFF

Prerequisites: open only to students who have completed their doctoral candidacy examinations; consent of department and instructor.

Preparation for the teaching of an undergraduate course in psychology conducted under the guidance of a faculty member in the department. Students wishing to enroll must prepare a short plan of study.

592AA-ZZ. Special Interest Group Research Seminar
(1) STAFF

Research seminar for special interest groups in psychology. Each special interest group has its own letter designation available in department office.

593. Professional Skills for Academic Psychologists
(3) ETTENBERG

Priority will be given to students who have successfully completed their doctoral candidacy exams.

A discussion of practical issues related to securing and maintaining an academic position within a university/college environment. Topics may include writing grants, preparing a vitae, the job interview,

tenure, conference presentations, lecture preparation and presentation.

594AA-ZZ. Special Topics
(3) STAFF
Special seminar on research subjects of current interest. Each faculty member has their own letter designation available in department office.

595. Independent Readings for M.A.
(2-12) STAFF
No more than 8 units total may be taken toward credit for the M.A.
The purpose of this course is to provide supervised readings on selected topics.

596. Directed Reading and Research
(2-12) STAFF
Required of all first-, second-, and third-year psychology graduate students. Minimum of 2 units per quarter. No more than half the units necessary for the master's degree may be taken in Psychology 596.
The purpose of this course is to provide supervised experience in experimental design and laboratory procedures on selected topics, including the formulation of experimental problems, discussion of relevant literature, and the analysis and interpretation of experimental results.

597. Individual Study for Ph.D. Examinations
(1-12) STAFF
No unit credit allowed toward advanced degree.
Preparation for Ph.D. examinations under supervision of chair of student's doctoral committee.

598. Master's Thesis Research and Preparation
(2-12) STAFF
No unit credit allowed toward advanced degree.
Research and preparation for the master's thesis.

599. Dissertation Research and Preparation
(2-12) STAFF
Empirical and theoretical investigations of special problems in psychology in relation to dissertation research.

Religious Studies

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Phillip E. Hammond, Ph.D., Columbia University, Professor (sociology of religion)

Richard D. Hecht, Ph.D., UC Los Angeles, Professor (history of religions, Judaic studies)

Barbara A. Holdrege, Ph.D., Harvard University, Associate Professor (comparative history of religions, South Asian religions, Judaic studies)

Gurinder Singh Mann, Ph.D., Columbia University, Professor (Sikh studies, South Asian religions)

William Powell, Ph.D., UC Berkeley, Associate Professor (history of religions—China)

Dwight F. Reynolds, Ph.D., University of Pennsylvania, Associate Professor (Arabic languages and literatures, folklore and folklife)

Wade Clark Roof, Ph.D., University of North Carolina, Professor (sociology and psychology of religion, American religion)

Inés Talamantez, Ph.D., UC San Diego, Associate Professor (Native American religions)

Christine M. Thomas, Ph.D., Harvard University, Assistant Professor (Hellenistic religions, early Christianity, archaeology of religions)

B. Alan Wallace, Ph.D., Stanford University, Lecturer (Tibetan)

Vesna B. Wallace, Ph.D., UC Berkeley, Lecturer (Sanskrit languages and literature)

David White, Ph.D., The University of Chicago, Associate Professor (South Asian religions)

Emeriti Faculty

W. Richard Comstock, Ph.D., Union Theological Seminary, Professor Emeritus (religion in western culture)

Nandini Iyer, M.A., Oxford University, Lecturer Emerita (Sanskrit)

Gerald J. Larson, Ph.D., Columbia University, Professor Emeritus

Charles H. Long, Ph.D., The University of Chicago, Professor Emeritus

Robert S. Michaelsen, Ph.D., Yale University, Professor Emeritus

Raimundo Panikkar, Ph.D., D.Sc., University of Madrid; Th.D., University of Rome, Professor Emeritus

Birger A. Pearson, Ph.D., Harvard University, Professor Emeritus

Ninian Smart, B. Phil., Oxford University, Professor (philosophy of religion, comparative religions)

Affiliated Faculty

Sarah Cline, Ph.D. (History)

Harold Drake, Ph.D. (History)

Ronald Egan, Ph.D. (East Asian Languages and Cultural Studies)

Robert Erickson, Ph.D. (English)

Sharon Farmer, Ph.D. (History)

Mario Garcia, Ph.D. (History and Chicano Studies)

Giles Gunn, Ph.D. (English)

Allan Grapard, Ph.D, (East Asian Languages and Cultural Studies)

Elvin Hatch, Ph.D. (Anthropology)

R. Stephen Humphreys, Ph.D. (History)

Mark Juergensmeyer, Ph.D. (Sociology)

Nuha N.N. Khoury, Ph.D. (History of Art and Architecture)

Mattison Mines, Ph.D. (Anthropology)

Marianne Mithun, Ph.D. (Linguistics)

Anne Marie Plane, Ph.D. (History)

Jeffrey Russell, Ph.D. (History)

Jon R. Snyder, Ph.D. (French and Italian)

Paul R. Spickard, Ph.D. (History)

Elisabeth Weber, Ph.D. (Germanic, Slavic, and Semitic Studies)

Simonetta Zamponi-Falasca, Ph.D. (Sociology)

The Department of Religious Studies at UCSB is unique among California universities, state universities, and colleges. The courses it offers address the critical issues relating to the subject of religion in its many facets: historical, cultural, literary, aesthetic, sociological, experiential, and philosophical. In introductory and advanced courses, its faculty—respected in their fields nationally and internationally—regularly teach about the religions of the world, and about the complex relationships between religion and politics, society, war, and everyday life. It is the only such department in the University of California system to offer B.A., M.A., and Ph.D. degrees.

All students who take a religious studies course learn both to appreciate the importance of religion to human thought, action, and creativity and to judge its character and historical impact in cultural context. Moreover, they discover how the critical study of religion leads to increased understanding of the relationships among the various fields of knowledge that constitute the humanities and social sciences. A departmental major gains sound general knowledge about religion east and west, ancient and modern. Careful selection of upper-division electives allows the undergraduate major to pursue a concentration in a variety of religious traditions. Students also become familiar with the ideas and methods employed in the critical study of religious phenomena. Enterprising students can qualify for a double major in religious studies and some other major field such as English, history, anthropology, political science, philosophy, art, or economics.

The bachelor of arts degree in religious studies is a solid liberal arts degree, providing graduates an excellent basis from which to pursue careers requiring imagination, problem-solving and communication skills, and awareness of human diversity. International studies and graduate work in the humanities and certain areas of the social sciences are other strong possibilities. Students with a bachelor's degree in religious studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Religious studies majors are encouraged to meet with the department's undergraduate advisor periodically for assistance in planning their curriculum. Also, the department chair and other faculty are available to consult about programs and academic plans. The department provides an information sheet for undergraduate majors, an up-to-date major requirement list, and a description of courses to be offered each quarter.

Foreign Languages

Many of the greatest ideas and writings concerning the study of religions, or of a religious character, were formulated in languages other than English. Majors are strongly urged to acquire proficiency in one or more European (e.g., French, German, Spanish, Greek, Latin) or non-European (e.g., Chinese, Japanese, Hindi, Arabic, Hebrew, Sanskrit) languages. Election to the Phi Beta Kappa honor society requires proficiency in one foreign language, usually demonstrated by completion of the fifth quarter or its equivalent. Students should consult with their departmental advisor to select the most appropriate language. Also, they should seriously consider participating in the university's Education Abroad Program, particularly in Asia, the Middle East, Africa, and Latin America.

Undergraduate Honors

The department offers honors sections in lower-division survey courses such as Religious Studies 1, 3, 5, 7, 8, 12, and 15. Upper-division College Honors Program students may design their own contract courses and independent studies courses with religious studies faculty. Candidates for the religious studies honors program should formally petition the department chair in the spring or early fall; each petition must be supported by a faculty letter of reference. Candidates must be in residence at UCSB for at least one year (three quarters) as religious studies majors, have a cumulative grade-point average of 3.5, and a grade-point average of 3.75 in religious studies. Once admitted, they work closely with department faculty to prepare an honors thesis. The honors seminar, Religious Studies 195, is designed to facilitate research and writing of the thesis. Honors program graduates are identified separately each year at the head of the graduation list for religious studies, and receive the award of Distinction in the Major upon graduation.

Students who complete the departmental honors program are eligible for induction into Theta Alpha Kappa, the national honor society in religious studies.

Awards

The Edward C. Truman award is presented annually to a freshman, sophomore, or junior major deemed outstanding by the department and the UCSB Affiliates.

Undergraduate Program

Bachelor of Arts—Religious Studies

Preparation for the major. Religious Studies 1.

Upper-division major. Forty-four units or 11 courses, distributed as described below. The same course units may not be used to fulfill the requirements in more than one of the areas listed below. Only one language course may apply toward credit for the major.

A. Methodological Approaches. Eight units from Religious Studies 102, 106, 107, 116C, 141A-B-C, 143, 144, 145, 146, 156A, 174, 179, 180.

B. Cultural Areas and Traditions. Twenty-four units divided into 12 units in an area of emphasis and 12 units in three other areas.

(1) South Asian Religious Traditions. Religious Studies 146E, 157, 158, 159D-E-F-G-H-I-J-K-L, 160, 161A-B, 162A, 162C, 164A-C, 165, 168, 168A-B-C-D, 169, 170, 181A-B-C.
(2) East Asian Religious Traditions. Religious Studies 120, 157, 161B, 163, 164B, 166A-B-C-E-F-G-H, 167A-B-D, 175, 178, 183.
(3) Jewish, Islamic, and Near Eastern Religious Traditions. Religious Studies 115A-B-C-D, 117A-B, 118J, 129, 130, 131A-B-C-D-E-F-H-J, 133, 140A-B-C-D-E-F, 142A-B-C, 149, 186, 189A-B-C.
(4) Christian, Mediterranean, and European Religious Traditions. Religious Studies 105, 107, 115D, 116A-B-D, 118J, 126, 127A-B-C, 128A-B-C, 137, 139A-B-C-D-E, 187, 188.
(5) Religions of the Americas. Religious Studies 110D, 114B-C-D, 118, 123, 124, 126, 141B-C, 147, 150, 151A-B, 152, 176, 191, 192, 193.

C. Topics in the Study of Religion. Eight units from Religious Studies 102, 103, 106, 109, 110, 110C, 112, 113, 114X, 119A, 132, 134, 136, 144, 145, 146, 155, 172A-B, 173, 177, 182, 193B.

D. Problems in the Study of Religion. Four units. Religious Studies 104, or a Senior Project: Religious Studies 195, or Independent Studies: Religious Studies 199.

Graduate Program

The Department of Religious Studies offers courses in the religious dimensions of the human experience in diverse traditions and cultures around the world and through time.

All programs emphasize a cross-cultural comparative study of religions and use multi-disciplinary approaches as appropriate to religious studies, incorporating such disciplines as philology, history, anthropology, sociology, comparative literature, psychology, and philosophy. Undergraduate and master's programs provide a general orientation toward religious studies; the doctoral program offers specialized training leading to professions in teaching and research.

In addition to departmental requirements, candidates for graduate degrees must meet the university degree requirements described in the chapter "Graduate Education at UCSB."

The department has available a number of fellowships to support graduate study, including

Christine Thomas

ASSISTANT PROFESSOR, RELIGIOUS STUDIES

"If you follow your heart in education you can arrive at something that's very valuable and useful," says Christine Thomas, assistant professor of religious studies. "I hope to teach as much by example as by lecturing, by conveying an attitude not just of tolerance but of compassionate understanding for people."

"If you follow your heart in education you can arrive at something that's very valuable and useful."

Thomas teaches undergraduate and graduate courses in early Christianity, religion, and western civilization, religion, and archaeology.

"The world is becoming more religiously plural by the minute," she says, "and compassion and tolerance are crucial for getting along in a multicultural society."

Thomas sees herself as a guide, leading students into new areas in where they can entertain completely different views than they themselves hold.

"People often come to classes with preconceived ideas, and I want them to look at topics from another angle, another standpoint." Her goal, she adds, is to introduce them to ideas that will interest them throughout their lives.

the J.F. Rowny Endowment Fellowship, the Japan Bamboo Foundation Fellowship, and the Eloise K. and Stephen Hay Fellowship for the Study of Prayer.

Admission

Applicants are admitted on a competitive basis. Undergraduate grade-point average counts heavily, and scores from the aptitude test of the Graduate Record Examination are required. In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB." Applicants interested in pursuing a Ph.D. who have completed the M.A. degree in religious studies (or its equivalent) elsewhere may apply directly to the Ph.D. program. Others should apply to the M.A./Ph.D. program, which entails completion of the M.A. Plan 1. Applications for the M.A./Ph.D. program are accepted for fall quarter only; the deadline is December 15. The same schedule is normally required for M.A. Plan 2 applicants.

Master of Arts—Religious Studies

Plan 1 (M.A./Ph.D.). Students admitted to the M.A./Ph.D. program will undertake the M.A. Plan 1. Students are required (1) to complete Religious Studies 200A-D, Proseminar in History and Theory of Religion; (2) to pass a language exam in French or German; (3) to complete 36 units, including no fewer than 24 graduate units; and (4) to write a research thesis under the guidance of the religious studies faculty.

The department awards financial aid only to those students in the M.A./Ph.D. program (and not necessarily to all of them, depending upon departmental resources). Students receiving financial aid from the department must meet their degree requirements in a timely fashion. Those who do not fulfill the requirements within a two-year period may be granted a terminal M.A. provided they have completed the 36-unit requirement.

Plan 2 (M.A. only). Students entering the M.A.-only program are required (1) to complete at least 36 units, of which at least 24 must be graduate-level units; (2) to complete Religious Studies 200A, Anthropology and Sociology of Religion; and (3) to pass a comprehensive examination following Religious Studies 201. The Department of Religious Studies considers the M.A.-only program to be most appropriate for individuals seeking professional or career development in fields not exclusively related to university teaching and research.

Doctor of Philosophy—Religious Studies

The Ph.D. program in the Department of Religious Studies comprises a crosscultural and multidisciplinary approach to the study of religion. The crosscultural component of the program is concerned with the comparative study of religious traditions from among five cultural areas: Christian, Mediterranean, and European religious traditions; East Asian religious traditions; Jewish, Islamic, and near Eastern religious traditions; religions of the Americas; and South Asian religious traditions. Students are expected to engage with the multiple disciplinary approaches to the study of religion, and their concomitant methodologies: philosophical, historical anthropological, and sociological.

All Ph.D. students must take Religious Studies 200A, 200B, 200C, and 200D. Other courses in fulfillment of the Ph.D. requirement will be selected in consultation with the student's advisor. Students admitted directly into the doctoral program without the M.A. or its equivalent are required to take 36 units of advanced work. Doctoral students must complete a second examination in a modern or classical language in which a substantive religious studies bibliography exists: either French or German (depending on the language chosen to fulfill the M.A. requirement), or a language appropriate to their cultural area of concentration. Programs in certain cultural areas will require additional language competency. With the completion of these requirements, students will, in consultation with a doctoral advisor and committee, sit for no less than three field examinations in their areas of specialization. Students will also prepare a dissertation prospectus and pass an oral qualifying exam. In addition to required coursework and language competency, advancement to candidacy (C. Phil.) is dependent on the satisfactory completion of these three requirements.

Candidates must then write a dissertation, under the supervision of the doctoral committee, demonstrating an ability to do significant research and scholarly analysis and to present findings and conclusions with precision and clarity. The dissertation must normally be completed within two to three years after passing the qualifying examination.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Religious Studies Courses

LOWER DIVISION

1. Introduction to the Study of Religion
(4) STAFF
A consideration of major themes, issues, types of figures and phenomena, and traditions—all selected from the history of religion so as to illustrate the great variety of religious phenomena and to suggest some of the ways such things may be responsibly studied.

3. Introduction to Asian Religious Traditions
(4) STAFF
Same course as East Asian Cultural Studies 3.
An introduction to the basic texts, institutions, and practices of the religious traditions of South Asia and East Asia.

5. Introduction to Judaism, Christianity, and Islam
(4) STAFF
An introduction to the basic texts, institutions, and practices of western religious traditions: Judaism, Christianity, and Islam.

7. Introduction to American Religion
(4) ALBANESE, ROOF, HAMMOND
Religion and religions in America. Survey of the variety of religions or religious traditions in America, including Native American, Asian, African-American, Judaism, Roman Catholicism, and the varieties of Protestantism. Focus also on such common features as "civil religion."

8. Introduction to Religion and Ethics
(4) ROOF
An introductory survey of the basic issues and themes in the relationship between religion and ethics.

9. Ethnicity and Religion
(4) STAFF
The religions and philosophies of four major ethnic groups in the United States and their relation to East Asian, African, Latin and other cultures.

10A. Arabic I
(5) CAMPO
Introductory Modern Standard Arabic: pronunciation, script, basic grammar, and vocabulary. Includes lessons in reading, conversation, and oral comprehension. Weekly sections involve cultural materials such as elementary calligraphy, Middle Eastern cooking, Arabic television shows, films, singing, and folk dance.

10B. Arabic II
(5) CAMPO
Prerequisite: Religious Studies 10A.
Continuation of Arabic I.

10C. Arabic III
(5) CAMPO
Prerequisites: Religious Studies 10A-B.
Continuation of Arabic II.

10D. Arabic IV
(5) REYNOLDS
Prerequisites: Religious Studies 10A-B-C.
Intermediate Arabic: complex grammar and vocabulary, readings in classical and modern Arabic literature, including short stories, newspaper articles, and poetry. Extensive use of audio-visual materials including news broadcasts, television shows, and films. Weekly conversation section.

10E. Arabic V
(5) REYNOLDS
Prerequisite: Religious Studies 10D.
Continuation of Arabic IV.

10F. Arabic VI
(5) REYNOLDS
Prerequisite: Religious Studies 10E.
Continuation of Arabic V.

11A. Hindi I
(4) BOYLE

The beginning course in Hindi. Survey of grammar. Graded exercises and readings drawn from Hindi literature, leading to mastery of grammatical structures and essential vocabulary and achievement of basic reading and writing competence.

11B. Hindi II
(4) BOYLE

Continuation of Hindi I.

11C. Hindi III
(4) BOYLE

Continuation of Hindi II.

11D. Hindi IV
(4) BOYLE

Prerequisite: Religious Studies 11C.

Intermediate Hindi. Selected readings in Hindi fiction and nonfiction, with exercises in grammar, composition, and conversation.

11E. Hindi V
(4) BOYLE

Prerequisite: Religious Studies 11D.

Continuation of Religious Studies 11D.

11F. Hindi VI
(4) BOYLE

Prerequisite: Religious Studies 11E.

Continuation of Religious Studies 11E.

12. Religious Approaches to Death
(4) COMSTOCK

An examination of traditional and modern works dealing with the art of dying and death. Current discussions amongst sociologists and psychologists as well as significant literary works are related to materials on death in religious traditions like Christianity and Buddhism.

14. Introduction to Native American Religious Studies
(4) TALAMANTEZ

This course is designed as an introduction to the contribution that Native American religions make to the general study of religion. Metaphysical and philosophical aspects of North American native culture. Major concepts of belief systems, religion, and medicine. Theories of balance, harmony, knowledge, power, ritual, and ceremony.

15. Religion and Psychology
(4) ROOF

A survey of theories and approaches to the study of religion from the perspective of psychology, with an emphasis on psychoanalytical, analytical, and humanistic psychology as well as on other theorists and trends emerging out of or relating to these traditions in psychology.

17A. Introduction Biblical Hebrew I
(4) GARR

This course will introduce the student to the orthography, phonology, grammar, and lexicon of Tiberian Biblical Hebrew as found in most printed Bibles. There will be extensive grammatical exercise in recitation and written forms in which the student learns the bulk of Hebrew grammar. The course will conclude with selected Pentateuchal readings when the student applies grammatical knowledge to actual texts.

17B. Introduction to Biblical Hebrew II
(4) GARR

Prerequisite: Religious Studies 17A.

Continuation of Religious Studies 17A.

17C. Introduction to Biblical Hebrew III
(4) GARR

Prerequisite: Religious Studies 17B.

Continuation of Religious Studies 17B.

20. Nature: East Asian Views
(4) GRAPARD

Same course as East Asian Cultural Studies 20.

An introduction to the ways in which Chinese and Japanese cultures have conceptualized nature and humankind's place in it.

21. Zen
(4) GRAPARD

Same course as East Asian Cultural Studies 21.

An introduction to the history and texts of the major lineages of Ch'an Buddhism in China, and Zen Buddhism in Japan.

22. Religious Narratives and Paintings of Japan
(4) GRAPARD

Same course as Japanese 22.

A survey and cultural analysis of the painted scrolls and texts related to historical records of religious institutions in medieval and premodern Japan.

25. Dimensions of Christianity
(4) STAFF

In some ways Christianity is the least understood of the world's religions, perhaps because those who study it are either too close to it, too alienated, or too specialized. This course places Christianity in its plural and multidimensional context and uses the methods of the history of religions to examine it.

30A. Elementary Tibetan I
(4) WALLACE

Not open for credit to students who have completed Religious Studies 30.

Introduction to the grammar of standard or classical Tibetan. Textual materials concentrate on prose readings drawn from Tibetan historical and literary sources.

30B. Elementary Tibetan II
(4) WALLACE

Prerequisite: Religious Studies 30A.

Continuation of Tibetan I.

30C. Elementary Tibetan III
(4) WALLACE

Prerequisite: Religious Studies 30B.

Continuation of Tibetan II.

30D. Intermediate Tibetan I
(4) WALLACE

Prerequisite: Religious Studies 30C.

Intermediate spoken and written Tibetan, with an emphasis on written Tibetan. Written materials include readings from Tibetan Buddhism and other branches of literature, including opera and poetry.

30E. Intermediate Tibetan II
(4) WALLACE

Prerequisite: Religious Studies 30D.

Intermediate spoken and written Tibetan, with an emphasis on written Tibetan. Written materials include readings from Tibetan Buddhism and other branches of literature, including opera and poetry.

30F. Intermediate Tibetan III
(4) WALLACE

Prerequisite: Religious Studies 30E.

Intermediate spoken and written Tibetan, with an emphasis on written Tibetan. Written materials include readings from Tibetan Buddhism and other branches of literature, including opera and poetry.

35. Religion and Politics in Latin America
(4) STAFF

This course examines the political, social, economic, and religious factors contributing to the development of liberation theology in Latin America. Overview of twentieth century Latin American history including: colonial legacy; economic patterns; role of the military as a political force.

40. Religion and Society
(4) HAMMOND, ROOF

An introduction to the analysis of how social forces shape religion and religious forces shape the behavior of persons and institutions. The contemporary scene is emphasized, although attention is also given to cross-cultural and historical matters.

41. Heresies
(4) THOMAS

Study of a selection of heretical movements from a variety of religious traditions in the ancient and medieval periods. Illustrates the sociological, political, economic and philosophical dimensions of heresy formation and self-definition within religious traditions.

42. Religion and Sexuality
(4) STAFF

Examination and analysis of how various religious communities in different cultural settings define and prescribe sexuality and related moral issues.

57A. Elementary Persian I
(5) STAFF

Introduction to Persian pronunciation, script, and basic grammar, and vocabulary. Includes lessons in reading, writing, conversation, and oral comprehension. Sections involve audio-visual materials and a general introduction to the literatures and cultures of Persian-speaking Iran, Tajikistan, and Afghanistan.

57B. Elementary Persian II
(5) STAFF

Prerequisite: Religious Studies 57A.

Continuation of Persian I.

57C. Elementary Persian II
(5) STAFF

Prerequisite: Religious Studies 57B.

Continuation of Persian II.

57D. Intermediate Persian IV
(5) STAFF

Prerequisite: Religious Studies 57C.

Continuation of Persian III.

57E. Intermediate Persian V
(5) STAFF

Prerequisite: Religious Studies 57D.

Continuation of Persian IV.

57F. Intermediate Persian VI
(5) STAFF

Prerequisite: Religious Studies 57E.

Continuation of Persian V.

60A. Elementary Punjabi I
(4) STAFF

Introduction to Punjabi, a major language of northern India and Pakistan. Beginning with the Gurmukhi script, the course offers an intensive study in the speaking, reading, and writing of the language.

60B. Elementary Punjabi II
(4) STAFF

Prerequisite: Religious Studies 60A.

Continuation of Punjabi I.

60C. Elementary Punjabi III
(4) STAFF

Prerequisite: Religious Studies 60B.

Continuation of Punjabi II.

61A. Religion in Black America (Part I)
(4) STAFF

Same course as Black Studies 60A.

A historical examination, beginning with West African heritage, of Afro-American religious leaders and organizations in the United States during slavery and until the end of the nineteenth century.

61B. Religion in Black America (Part II)
(4) STAFF

Same course as Black Studies 60B.

A historical survey of major Black religious figures, organizations, movements, philosophies, and issues. Emphasis on contemporary religious phenomena in the Black religious community of the United States during the twentieth century.

70. Writing and Religious Traditions
(4) GARR

A survey of writing systems in the world's religious traditions concentrating on origins, evolutionary trajectories, and manifestations. Special attention given to the alphabet, the social and religious significance of writing, as well as the issue of literacy within religious traditions.

80A. Religion and Western Civilization I: Ancient
(4) HECHT, COMSTOCK, CARLSON, THOMAS

The religions of classical antiquity; myths, rituals, and cults of Greece and Rome; religious dimensions of Greek and Roman philosophy; beginnings and development of Christianity to time of Theodosius the Great (379-395 C.E.)

80B. Religion and Western Civilization II: Medieval
(4) CARLSON

The decline of classical antiquity; the emergence of medieval Christendom; religion and culture of the Middle Ages (eleventh-thirteenth centuries); subsequent development of the Renaissance and Reformation.

80C. Religion and Western Civilization III: Modern
(4) CARLSON

Religious responses to the emergence of modern science in the seventeenth century; religion in eighteenth century Europe; religion in America; the challenges of the twentieth century.

90AA-ZZ. Topics in Religious Studies
(4) STAFF

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Lectures in special areas of interest in religious studies. Specific course titles to be announced by the department each quarter offered.

UPPER DIVISION

Please note that the letter suffixes attached to the numbers of many of the upper-division courses do not necessarily indicate a prerequisite sequence.

102. Symbolizations of the Feminine in Cross-Cultural Perspective
(4) HOLDREGE

A comparative analysis of symbolizations of the feminine in Western and Asian religious traditions, with attention to contrasting images of the feminine as an inherently passive principle on the one hand and as an activating principle of divine power on the other.

103. The Ritual Dimensions of Religious Life
(4) HOLDREGE, GRAPARD

An exploration of the nature, structure, and function of ritual in religious life, including analysis of the sacred time and space of ritual and of categories of ritual such as sacrifice, communal worship, festivals, rites of passage, and prayer and meditation.

104. Problems in the Study of Religion
(4) STAFF

Prerequisite: Religious Studies majors only. Recommended for junior year.

Problems involved in the meaning of "religion," the goals of religious studies, religious pluralism, and the role of religion in the modern world.

105. The Teachings of Jesus
(4) THOMAS

Exploration and analysis of the teachings of Jesus, the significance of his person, and the sources of our knowledge about him, in historical, comparative, and contemporary terms.

106. Modernity and the Process of Secularization
(4) CARLSON

A study of sociological, psychological, and philosophical attempts to define the modern West in terms of the marginalization and/or transformation of traditional Christian thought and institutions.

107. Critique and Christianity
(4) CARLSON

Examination of the modern critical thinking that grounds the major nineteenth- and twentieth-century attacks on Christianity. Attempts, within Christian thought, to answer and/or appropriate such critical perspectives.

109. Religion, Culture, and Millennialism
(4) STAFF

Millennialism deals with the expectation of an imminent age of well-being within human history. The course examines the history of both religious millennial movements and secular utopian versions; contemporary religious groups; and "New Age" communities that focus on the year 2000.

110. Religion and Literature
(4) STAFF

An examination of the interaction between religion and literature through the study of literary works. Figures like John Milton, William Blake, and T. S. Eliot are among those considered.

110C. Religion and Art
(4) HECHT

Exploration of the relationships between religion and twentieth-century art. Special attention on the symbolisms of space, body, time, word, and memory in modern artists such as Mondrian, Chagall, and O'Keefe, and in contemporary artists like Bill Viola, James Turrell, Marina Abramovic, Wolfgang Laib, Anselm Kiefer, Anish Kapoor and Christian Boltanski.

110D. Ritual Art and Verbal Art of the Pacific Northwest
(4) TALAMANTEZ

Prerequisite: Religious Studies 14.

Religious ethos of selected peoples of the Pacific Northwest, as is expressed in masking, body paint, art, and architecture. Study of mythology, ritual, symbolism, and contemporary developments.

112. Ethics of Biomedical Technology
(3) GIBOR, KOHL

Same course as MCDB 121.

An interdisciplinary approach to questions raised by advances in biotechnology including advances in human reproduction, definitions of "human life," the right to die, organ transplantation and donation, and animal rights. Discussants will include biologists, ethicists, and religious leaders.

113. Religion and Film
(4) STAFF

An examination of religious themes and forms as they appear in significant works of modern film. The nature of man, the problem of suffering, the quest for meaning are among the topics considered.

114B. Religious Traditions of the Southwest
(4) TALAMANTEZ

Survey of the cultures of the southwestern United States to discern the place of religion in the life of Athabascan, Pueblo, Uto-Aztecan, and native peoples of California. Consideration of the relationships between social structure, environment, and history as they affect religious behavior. Brief overview of the Native American church, folk Catholicism, curanderismo, and espiritualismo.

114C. Myths, Symbols, and Transitions in Native American Religions
(4) TALAMANTEZ

An exploration of the nature, structure, and meaning of ritual act and ritual language in the religious life of native cultures of the Southwest. Intensive study of selected ritual oratory with particular attention to myth and symbol. The relevance of linguistic models for interpreting ritual. Approaches to symbolism including the interrelations between different media (oral, aural, tactile, plastic), and to features of formalism, redundancy, and condensation in ritual. Examination of a select number of monographs.

114D. Religion and Healing in Native America
(4) TALAMANTEZ

An interdisciplinary and comparative study of representative Native American cultures and their religio-medico systems. Emphasis on understanding the experimentation, evaluation, and sacralization of the biosphere in culture to meet human physical and spiritual needs. Examination of the special place of language in well-being. Attention will be given to changes which are a result of contact with European culture.

114X. Dante's "Divine Comedy"
(4) SNYDER

Prerequisites: Writing 2 and 50.

Same course as Italian 114X.

Dante's masterpiece, *The Divine Comedy*, remains among the most astonishing works of world literature. This course follows the pilgrims progress through *Inferno*, *Purgatorio*, and *Paradiso* in search of "the love that moves the sun and the other stars." In English.

115A. Literature and Religion of the Hebrew Bible/Old Testament
(4) HECHT, GARR

Introduction to the varieties of literature, traditions, and institutions of ancient Israel through the prophetic period.

115AX. Religious Texts of the Hebrew Bible
(1) HECHT

Prerequisite: concurrent enrollment in Religious Studies 115A.

Recommended preparation: one year of either Classical or Modern Hebrew.

An opportunity to read selected texts from the Hebrew Bible coordinated with the lectures for Religious Studies 115A. Texts include I-II Samuel, I-II Kings, Genesis, Exodus, Leviticus, Deuteronomy, Amos, Esther, Ruth, and Ezra.

115B. The Prophets
(4) HECHT

The origins, development, and enduring significance of the prophetic movement in ancient Israel.

115C. The Hebrew Bible and Its Interpretation in the Jewish Tradition
(4) HOLDREGE

A study of the history of interpretations of the Hebrew Bible in the Jewish tradition, including an analysis of the principal modes and trends of biblical exegesis—halakhic and aggadic Midrash, medieval commentaries, philosophical exegesis, kabbalistic interpretations, and modern commentaries. (Knowledge of Hebrew not required.)

115D. The Social and Cultural History of the Bible
(4) HECHT

Examination of the role of the Hebrew Bible and the New Testament in the formation of western civilization. Central topics are the interplay between the Bible and art, architecture, iconography; liturgy, poetry, literature; cosmology, scientific thought, economics, politics.

116A. The New Testament and Early Christianity
(4) THOMAS

Study of the varieties of early Christian traditions and literature of the first century, with special (but not exclusive) attention to the New Testament.

116B. Second-Century Christianity
(4) THOMAS

Recommended preparation: Religious Studies 116A or any lower-division course in religious studies.

Study of the various religious trends in developing Christianity as represented in the writings of the early Fathers, the later books of the New Testament Apocrypha, and "heretical" movements.

116C. Archaeology and the Study of Religion
(4) THOMAS

Prerequisite: any lower-division religious studies class.

An examination of the uses of archaeological materials to reconstruct the history of religions in the ancient world, with special attention to the relationships between material culture, religious iconography, epigraphy, and sacred texts.

116D. Early Christian Novels
(4) THOMAS

A study of the roots of Christian biography in literary-critical and historical perspective, as both entertainment and edification, in a series extending from poytheist (pagan) and intertestamental Jewish novels to the Gospels, the Acts literature, and Christian hagiography.

117A. The Language and Religion of the Mishnah and Talmud
(4) GARR

Prerequisite: Religious Studies 115A or 115B or 115C.

Examination of the religious traditions of Mesopotamia, the Hittites, and the peoples of Syria-

Palestine as seen through their literary and archeological remains.

117B. The Language and Religion of the Mishnah and Talmud
(4) HECHT, GARR

Prerequisite: Religious Studies 117A.

Continuation of 117A. Based on textual sources, this course will focus upon the religion of Jews in Parthian and Sassanian periods, as well as on the cultural and social problems which Jews faced while living in a Persian culture.

118. Religious Contours of the Western Hemisphere
(4) TALAMANTEZ

Surveys history and forms of religion in Western Hemisphere. Paleolithic and Pre-Columbian traditions and distribution. Conquest and colonization: Latin America and Caribbean. North and Latin American evangelism and political organization. Mestizaje, syncretism in Native American, Euro-American, and African populations.

118J. Jesus, Judaism, and the Origins of Christianity
(4) FRIEDLAND

Prerequisite: upper-division standing.

Same course as Sociology 118J.

A sociohistorical perspective that analyzes the relationship between the Jesus movement and the Jewish society of his day. Examines the organization and meaning of sanctity and sovereignty, and positions the Jesus movement within the politics of these institutions.

119A. Epics of the World
(4) REYNOLDS

Introduction to epic traditions from Central Asia, India, Iran, Turkey, the Arab World and Africa through texts, recordings, films and live performance exploring relationships between epic and religion, social structures, gender roles, and communal identities using literary and performance theory.

120. Shugendo: Japanese Mountain Religion
(4) GRAPARD

Same course as Japanese 119.

Historical study of texts and practices of Japanese mountain ascetics (Yamabushi), and of their role in the formation of Japanese culture, from 700 to present.

121A. Introduction to Targumic Aramaic I
(4) GARR

Prerequisites: Religious Studies 17A-B-C.

The grammar and basic vocabulary of Targumic Aramaic, concentrating on Targum Onkelos—the "official" Jewish Aramaic translation of the Old Testament. Students memorize the nominal and verbal paradigms of the dialect, and read selected passages from the Joseph story.

121B. Introduction to Targumic Aramaic II
(4) GARR

Prerequisites: Religious Studies 17A-B-C and 121A.

Continuation of Religious Studies 121A.

122A. Syriac I
(4) GARR

Prerequisites: Religious Studies 17A-B-C.

Introduction to the grammar and literature of the Syriac language. Emphasis on the acquisition of Syriac language skills.

122B. Syriac II
(4) GARR

Prerequisites: Religious Studies 17A-B-C and 122A.

Continuation of Religious Studies 122A.

122C. Syriac III
(4) GARR

Prerequisites: Religious Studies 17A-B-C and 122A-B.

Continuation of Religious Studies 122B.

123. Asian American Religions
(4) STAFF

A historical overview of the Asian religious traditions in America as experienced by Asian immigrants themselves. Focus includes an analysis of how Asian religious traditions are reflected in the context of America and how generational patterns affect religious identity.

124. The History of Religions in Aztlan
(4) HECHT

This course will examine the religious constituents of Chicano identities by focusing on different Chicano myths and rituals, orientations to and manifestations of the sacred, centers and peripheries, discourses, pilgrimage, sacrifice, and general modes of symbolizations.

125. Special Topics
(4) STAFF

Prerequisite: upper-division standing or one prior course in religious studies.

No more than 8 units of major credit will be given, but course may be repeated up to a 12-unit maximum.

Lectures in special areas of interest in religious studies. Specific course titles to be announced by the department each quarter.

126. Roman Catholicism Today
(4) HAMMOND

A survey of the history of Roman Catholic Christianity, leading to Vatican II and subsequent changes in the church.

127A. Christian Thought and Cultures of the Ancient World
(4) THOMAS

Outline of the primary philosophical, sociological, and cultural trends in the first four centuries of Christianity: the changing relationship to imperial government, the "parting of the ways" with Judaism, the cultural inheritance of paganism, problems of self-definition against heresies.

127B. Christian Thought and Cultures of the Middle Ages
(4) CARLSON

Exploration of some of the major intellectual and cultural developments defining medieval Christian Europe. Materials considered include both contemporary historical studies and selected primary sources in theology, philosophy, literature, and the arts.

127C. Christian Thought and Cultures of the Reformation
(4) CARLSON

Addresses major intellectual and cultural developments relating to the disintegration of medieval Christianity and the birth of modern Europe. Attention given to both contemporary historical studies and selected primary sources in theology, philosophy, literature, and the arts.

128A. Religion and Spirituality in the Roman Empire
(4) THOMAS

Not open for credit to students who have completed Religious Studies 128.

Introduction to "pagan" spirituality: rites marking the seasonal and life cycles, syncretism and multiculturalism, initiation into religious associations, dreams and oracles, with attention both to religious texts and to the symbolic, iconographic, and structural evidence offered by archaeological data.

128B. The Legacy of Greek Philosophy in Ancient Religion
(4) THOMAS

Recommended preparation: a lower-division course in religious studies.

Traces the development of Greek philosophy from its religious roots, the emergence of the major schools as voluntary associations, and their afterlife in Hellenistic Judaism, Christian piety, Gnosticism, patristic writings, and Neoplatonism.

128C. The Sacred Geography of the Ancient Mediterranean World
(4) THOMAS

A survey of religious sites in polytheism and early Christianity. After general introduction to the sites, the topos of sacred space and ritual, and the methods of secondary research for archaeological materials, students produce audiovisual presentations in seminar format.

129. Religions of the Ancient Near East
(4) CAMPO, GARR

Examination of the religious traditions of Mesopotamia, the Hittites, and the peoples of Syria-Palestine as seen through their literarary and archaeological remains.

130. Judaism
(4) HECHT

Elements of traditional Judaism in biblical and rabbinic times.

130X. Religious Texts of the Jewish Tradition
(1) HECHT

Prerequisite: concurrent enrollment in Religious Studies 130.

Recommended preparation: one year of either Classical or Modern Hebrew.

Readings from the Jewish texts correlated to lecture themes of Religious Studies 130. Texts include the Siddur and festival Machzor, the Passover Haggadah, Haim Bialik and Yehoshua Ravnitzky's Sefer Ha-Agadah, and S.Y. Agnon's Yamin Nora'im and collected short stories.

131A. Palestinian Judaism from Ezra to Akiba
(4) HECHT

Study of the various religious trends in Palestine from the time of Ezra to the second revolt, with special attention to the rise and development of the apocalyptic.

131B. Judaism in the Graeco-Roman World
(4) HECHT

Study of the cultural and religious interactions of Judaism with Hellenism among the Greek-speaking Jews of the Diaspora. Special attention will be given to the writings of Philo of Alexandria.

131C. Judaism in the Medieval World
(4) HECHT

Course covers period from 650 to 1500 CE and topics: Karaite movements; biblical and talmaudic commentaries; growth of mystical movements; disputations between Christians and Jews.

131D. Judaism in Modern Times
(4) HECHT

Challenge of the Enlightenment and emancipation movements to traditional Jewish life in Western and Eastern Europe. Religious and secular responses to these challenges (orthodox, conservative, reform, Zionism, socialism) in Europe and the United States.

131DX. Jewish Religious Texts from Modern Times
(1) HECHT

Prerequisite: concurrent enrollment in Religious Studies 131D

Recommended preparation: one year of Modern Hebrew.

Readings from a selection of Hebrew texts correlated to lecture themes of Religious Studies 131D. Texts include the works of Isaac Luria, Shneur Zalman of Ladi, Nachman of Bratzlav, the Musar tradition, Samson Raphael Hirsch, Ahad Ha-Am and Aaron David Gordon.

131E. Contemporary Trends in Judaism
(4) HECHT

An examination of the variety of trends in Judaism from the First World War to the present. Major areas of study include the following: the philosophies of Franz Rosenzweig, Martin Buber, and Abraham Heschel; the growth of the conservative and reform movements in America; the Holocaust; the postwar disorientation and responses to the Holocaust.

131F. The History of Anti-Semitism
(4) HECHT

A systematic examination of the history of anti-Semitism, beginning with the emergence of anti-Judaism in the world of late antiquity, its transformation into theological anti-Semitism in the Middle Ages, and the emergence of racial anti-Semitism in the modern world. The central focus will be anti-Semitism as a religio-historical category.

131H. Politics and Religion in the City: The Case of Jerusalem
(4) HECHT

Same course as Sociology 131H.

This course examines relationships between religion and politics in Jerusalem. As a sacred center for Judaism, Christianity, and Islam, and national center for Israelis and Palestinians, Jerusalem provides the unique opportunity to examine co-existing groups holding opposite world views.

131J. Introduction to Rabbinic Literature
(4) HOLDREGE

An introduction to the basic texts of rabbinic literature through an analysis of representative passages from the Mishnah, Talmud, and Midrash. Particular attention will be given to the various types of Midrash and the principles and methods of Midrashic interpretation. (Knowledge of Hebrew not required.)

132. The Contemplative Life
(4) HECHT

A comparative study of the role of contemplation in religious traditions. Exploration of the relationships between contemplation and prayer, ethics, the arts, mysticism, and community.

133. Introduction to Jewish Mysticism
(4) HOLDREGE

An introduction to the schools and texts of Jewish mysticism, with particular attention to the Zohar, Lurianic Kabbalah, and Hasidism. Examination of conceptions of God and the sefirot, Torah, creation, and redemption, along with consideration of the role of meditative techniques.

134. Religion and Violence
(4) HECHT

This course examines the capacity of religion to both mobilize and legitimate human destructiveness. A number of theoretical perspectives will be explored alongside of historical case studies drawn from India, Northern Ireland, Egypt, Lebanon, Israel-Palestine, and Sri Lanka.

136. Creation Myths
(4) WHITE

Survey of cosmogonic myths within the world's mythological traditions with special attention to pervasive mythemes, historical connections between cognate traditions, and major scholarly theories relating cosmogony to broader social, psychological, ethical, and theological constructs.

137. Gnosticism and Manichaeism
(4) THOMAS

Prerequisite: a prior lower-division course in religious studies.

Not open for credit to students who have completed Religious Studies 137A or 137B.

Study of the Gnostic and Manichaean religions as philosophical and ritual systems, as book religions, and in their interrelations with Christianity, Judaism, Zoroastrianism, and Platonism.

139A. Early Christian Literature in Greek
(4) THOMAS

Not open for credit to students who have completed Religious Studies 139.

Recommended preparation: two quarters of Greek.

Reading of the New Testament and other first and second-century works as illustrations of Greek style, with attention to the development of Koine Greek, the influence of the Septuagint, textual apparatuses, and interpretational tools available to the reader of Greek.

139B. Greek and Latin Religious Texts
(4) THOMAS

Recommended preparation: knowledge of Greek or Latin.

Readings illustrating the range of religions in the Roman empire, from the Septuagint to Epictetus to Tertullian, from dream interpretations to the Hermetica, with attention to the texts as examples of the development of Koine Greek and later Latin.

139C. Religious Literature in Coptic
(4) THOMAS

Not open for credit to students who have completed Religious Studies 138A.

Recommended preparation: at least one year of Greek language.

An introduction to Sahidic-Coptic grammar, with special reference to the Coptic Gospel of Thomas.

139D. Religious Literature in Coptic
(4) THOMAS

Prerequisite: Religious Studies 139C.

Not open for credit to students who have completed Religious Studies 138B.

Readings from the Gospel of Thomas and the Sahidic New Testament.

139E. Religious Literature in Coptic
(4) THOMAS

Prerequisites: Religious Studies 139C-D.

Not open for credit to students who have completed Religious Studies 138C.

Readings from selected Subakhmimic Coptic texts.

140A. Islamic Traditions
(4) CAMPO

Introduction to history, doctrines, and practice of the Sunni, Shi'i, and Sufi expressions of Islam. Includes study of Qur'an, Hadith literature, religious law, and holy places.

140AX. Islamic Religious Texts
(1) CAMPO

Prerequisites: Religious Studies 10E; concurrent enrollment in Religious Studies 140A.

Reading and analysis of brief Islamic texts selected from the Our'an, Hadith, and historical texts. Emphasis on key topics addressed in Religious Studies 140A, such as religious belief and practice, law, relations with Judaism and Christianity, Shi'ism, and mystical experience.

140B. Religion, Society, and Politics in the Persian Gulf Region
(4) CAMPO

Prerequisite: upper-division standing.

History of Islam and politics in societies of Saudi Arabia, Iran, and Iraq since 1500. Emphasis on topics such as Shi'i and Sunni movements, religion and the state, Iranian revolution, economic development, and modernity.

140C. Islamic Mysticism and Religous Thought
(4) CAMPO

Prerequisite: upper-division standing.

Sufi mystics, ideas, practices, and movements. The relationship of Sufism to other currents of religious thought, such as theology and philosphy in the Middle East, Africa, and Asia.

140CX. Islamic Mystical Texts
(1) CAMPO

Prerequisites: Religious Studies 10E; concurrent enrollment in Religious Studies 140C.

Reading and analysis of brief Islamic texts in Arabic selected from the authors and intellectual traditions covered in Religious Studies 140C, with focus on the most famous thinkers, mystics, and philosophical works from the seventh to the twentieth centuries.

140D. Islam and Culture
(4) CAMPO

Prerequisite: upper-division standing.

Islam is often seen in terms of its formal components, or its controversial political impact in the modern world. This course presents Islam as it is incorporated into the daily lives of its adherents, ranging from Arabia to Europe, from Asia to America. It also includes a survey of Islamic contributions to world art and literature.

140E. Islam in America
(4) CAMPO

Prerequisite: upper-division standing.

Same course as Black Studies 140E.

Examines Islam in American setting, from introduction by African slaves and immigrants from Islamic countries, to transformation into the Black Muslim movement, to rise as one of the leading non-Christian religions in the United States during the 1970s and 80s.

140F. Modern Islamic Movements
(4) CAMPO

Prerequisite: upper-division standing.

Analysis of the variety of movements that have emerged in the modern Muslim world: Sufi, reformist, and revolutionary. Includes comparison of Islamic political movements, leaders, and ideologies in Arabia, Africa, Iran, India, and South East Asia.

140FX. Modern Islamic Texts
(1) CAMPO

Prerequisites: Religious Studies 10E; concurrent enrollment in Religious Studies 140F.

Reading and analysis of brief Islamic texts in Arabic selected from the authors and intellectual traditions covered in Religious Studies 140F, with focus on the most famous reformers, idealogies, and activist organizations of the nineteenth and twentieth centuries.

141A. Sociology of Religion: The Classical Statements
(4) HAMMOND

Religion as it is treated by major social theorists, including Marx, Weber, Durkheim, Freud, Simmel, Malinowski.

141B. Sociology of Religion: Religious Organizations in Contemporary Society
(4) HAMMOND

Religion as it appears in formal institutions, including the study of religious beliefs, religious professionals, and the dynamics of religious organizations. Emphasis is on contemporary U.S.

141C. Sociology of Religion: Church and State Relations
(4) HAMMOND

Prerequisites: upper-division standing; a prior lower-division course in religious studies.

Religion as it exists in the American civic realm, including the political aspects of churches, the religious aspects of politics, and the role of the courts in mediating the relationship of church and state.

142A. Religious Literature in Hebrew
(4) GARR

Prerequisite: Religious Studies 17A-B-C.

May be repeated for credit to a maximum of 8 units.

An application of grammatical and analytic skills acquired in introductory Hebrew to the rapid reading of Biblical Hebrew texts, complemented by an emphasis on critical and interpretive approaches to the Hebrew Bible. Texts change with each offering of the course.

142B. Religious Literature in Hebrew
(4) HECHT, GARR

Prerequisites: Religious Studies 17A-B-C.

Introduction to poetry of the Hebrew Bible with special reference to cultic songs. Texts will be selected from Psalms, Song of Songs, and Koheleth in order to examine the varieties of poetic style.

142C. Religious Literature in Hebrew
(4) HECHT, GARR

Prerequisites: Religious Studies 17A-B-C.

Introduction to Palestinian midrashic literature with special emphasis upon the development of reading skills. Texts to be selected from Bereshit Rabbah, Wayyikra Rabbah, and Pesikta de-Rav Kahana.

143. Seminar in Religion and Society: Research Methods
(4) ROOF

Applied research experience, with attention to practical aspects of research such as interviewing, field work, analysis, and write-up.

144. Scripture in Cross-Cultural Perspective
(4) HOLDREGE

A study of scripture as a general religious category through the examination of representative texts from the major religious traditions. Particular

attention will be given to the ways in which various religious communities have delimited and conceptualized these texts as "scripture."

145. Patterns in Comparative Religion
(4) HOLDREGE

Study of major religious issues as addressed by more than one religious tradition. The problem of comparative religion as an academic discipline.

146. Comparative Mysticism
(4) STAFF

Historical and descriptive analysis of selected mystical traditions in South and East Asia, the Middle East, and Europe; and the study of selected key figures, e.g. Chuang Tzu, Shankara, Plotinus, St. John of the Cross, etc.

146E. Hindu Mysticism
(4) WHITE

The history of Hindu mysticism and the lived experience of the Hindu mystic from the Vedas through the Tantras in doctrinal literature, mythology, ritual, and art.

147. Religion and the American Experience
(4) ALBANESE

May be repeated for credit in combination with Religious Studies 147A-J to a maximum of 8 units.

Study of one selected topic in US religious history in cultural context. Examples include evangelism, revivalism, fundamentalism, millennialism, communalism, transcendentalism, new religions past and present, metaphysical traditions, religion and ethnicity, religion and healing, nature religion, New Age.

148A. Advanced Arabic
(4) REYNOLDS

Prerequisite: Religious Studies 10F.

Advanced study of grammar and vocabulary; readings in the major genres of classical and modern Arabic literature, including Qur'an, medieval poetry and prose modern short story and novels, etc.

148B. Advanced Arabic
(4) REYNOLDS

Prerequisite: Religious Studies 148A.

Continuation of Religious Studies 148A.

148C. Advanced Arabic
(4) REYNOLDS

Prerequisite: Religious Studies 148B.

Continuation of Religious Studies 148B.

150. American Spiritualities
(4) ALBANESE

Study of different forms of spirituality in the United States past and present. Topics include relation of past to present and relation of spirituality to religion in the context of American culture.

151A. Religion in American History to 1865
(4) ALBANESE

Principal figures, groups, trends, and issues in religion in America to 1865.

151B. Religion in American History Since 1865
(4) ALBANESE

Principal figures, groups, trends, and issues in religion in America since 1865.

152. Religion in America Today
(4) ALBANESE, ROOF, HAMMOND

Recent trends in American religion and in interrelationships between religion and American society.

155. Religion and the Impact of Vietnam
(4) HECHT

Impact of the Vietnam War upon American values, religion, and senses of national purpose.

156A. Anthropology of Religion
(4) STAFF

Religion as a cultural phenomenon; the nature of religious experience among preliterate peoples; influence of social structure on the development of myth and ritual; comparison between various scientific methods in the study of religion.

157. Religious Arts of Asia
(4) GRAPARD

Prerequisite: consent of instructor.

Same course as EACS 157. Not open for credit to students who have completed East Asian Cultural Studies 157.

Introduction to the study of ritual through an understanding of iconography specifically and aesthetics generally, using the religious traditions of Hinduism, Buddhism, Taoism, and Shinto. This course is, therefore, more akin to a history of ancient cultures than to art history.

157A. Advanced Persian I
(S) STAFF

Prerequisite: Religious Studies 57F.

Continuation of Persian VI.

157B. Advanced Persian II
(S) STAFF

Prerequisite: Religious Studies 157A.

Continuation of Advanced Persian I.

157C. Advanced Persian III
(S) STAFF

Prerequisite: Religious Studies 157B.

Continuation of Advanced Persian II.

158. Hindu Myth and Image
(4) HOLDREGE

A study of the myth complexes and images associated with the major gods and goddesses of the Hindu pantheon. Consideration will be given to the appropriation and transformation of the mythology and iconography in the context of living devotional traditions.

159A. Introduction to Sanskrit
(4) WALLACE

An introduction to the phonology, morphology, and syntax of classical Sanskrit.

159B. Introduction to Sanskrit
(4) WALLACE

Prerequisite: Religious Studies 159A.

Reading and analysis of classical Sanskrit religious texts: *Mahabharata* and *Hitopadesa*.

159C. Introduction to Sanskrit
(4) WALLACE

Prerequisites: Religious Studies 159A-B.

Reading and analysis of classical Sanskrit religious texts: *Mahabharata* and *Hitopadesa*.

159D-E-F. Religious Literature in Sanskrit
(4-4-4) WALLACE

Prerequisites: Religious Studies 159A-B-C.

Reading and analysis of classical Sanskrit religious texts (courses need not be taken in sequence):

D. *Bhagavad-Gita*
E. *Upanisads*
F. Epics

159G-H-I. Religious Literature in Sanskrit
(4-4-4) WALLACE

Prerequisites: Religious Studies 159A-B-C.

Reading and analysis of classical Sanskrit religious texts (courses need not be taken in sequence):

G. *Puranas*
H. Yoga Literature
I. *Dharma-Sastras*

159J-K-L. Religious Literature in Sanskrit
(4-4-4) WALLACE

Prerequisites: Religious Studies 159A-B-C.

Reading and analysis of classical Sanskrit religious texts (courses need not be taken in sequence):

J. Philosophical Literature
K. Tantras
L. Medical Literature

160. Religious Traditions of India
(4) HOLDREGE, WHITE

An introduction to the classical religious traditions of India, with particular attention to three major areas of Indian religion and culture: the ritual, moral, and social order; philosophical perspectives and traditions; and traditions of mythology and devotion.

161A. Yoga Traditions of India
(4) WHITE

Religio-historical analysis of classical Samkhya and Yoga, Jain and Buddhist Yoga, and Tantric Yoga. Study of the role and function of meditation in Indian religion.

161B. Buddhist Meditation Traditions
(4) GRAPARD

Same course as East Asian Cultural Studies 161B.

A consideration of major forms of Buddhist meditation, from both the South Asian and the East Asian traditions, with special attention given to determining the nature of meditation as a variety of religious experience.

162A. Indian Philosophy and Religion
(4) STAFF

The course examines the degree to which certain representative metaphysical systems reflect religious interests and experiences—systems such as those of Nagarjuna, Shankara, Ramanuja, and Madhva.

162C. Sikhism
(4) MANN

Prerequisite: a prior lower-division course in religious studies.

Focusing on the beliefs, literature, and the history of the Sikhs, the course will trace the development of Sikhism from its inception as a part of a devotional movement to its modern manifestation as a powerful religious minority in contemporary India.

163. Images of Japan: The Ideology of Representation
(4) GRAPARD

Not open for credit to students who have completed Japanese 163.

Analysis of how Japanese culture represented itself to itself: religion, art, literature, and maps.

164A. Buddhist Traditions in South Asia
(4) WHITE

Origin and development of Buddhist tradition in India and South Asia.

164B. Buddhist Traditions in East Asia
(4) POWELL

Same course as East Asian Cultural Studies 164B.

Recommended preparation: background in Indian Buddhism.

A consideration of the Buddhist tradition and its evolution in China, with emphasis on the changes which Buddhism underwent in its encounter with Chinese traditions and historical circumstances.

165. The Vedic Traditions of India
(4) WHITE, HOLDREGE

A study of the Vedic traditions of India, including an analysis of Vedic gods and goddesses, creation narratives, ritual traditions, sociocultural taxonomies, and metaphysical speculations.

166A. Religion in Chinese Culture
(4) POWELL

Same course as Chinese 166A.

A survey of major periods and themes in the history of the Confucian, Taoist, and Chinese Buddhist traditions, with particular emphasis on the differences and tensions among them and on the contributions of each to the formation of the Chinese civilization.

166AX. Chinese Texts
(1) POWELL

Prerequisites: Chinese 6; concurrent enrollment in Religious Studies 166A.

Readings from some of the primary texts associated with various Chinese religious traditions considered in Religious Studies 166A. Texts from which selections will be drawn include the *Lun Yu*, the *Tao Te Ching*, and the *Lotus Sutra*.

166B. Taoist Traditions of China
(4) POWELL

Same course as Chinese 166B.

A study of the classical sources of Taoism, followed by a consideration of the varieties of religious practice which developed from those sources.

166C. Confucian Traditions: The Classical Period
(4) POWELL

Same course as Chinese 166C.

A treatment of the origins of Confucianism and of its development through the Han dynasty (to A.D.

200), with special attention to the variety of humane and spiritual disciplines which came to be called "Confucian." Emphasis on the interpretation of primary texts like the *Analects*, the *Mencius*, the *Hsun Tzu*, etc.

166E. The Flowering of Chinese Buddhism
(4) POWELL

Same course as Chinese 166E.

Recommended preparation: Religious Studies 164B.

A study of the distinctively Chinese forms of Buddhism which emerged in the sixth and seventh centuries A.D. Emphasis will be on the Hua-Yen, T'ien-t'ai, and Ch'an traditions, and on the features of those traditions which distinguish them most clearly from Indian Buddhism.

166F. Religious Literature in Chinese: Buddhist Texts
(4) POWELL

Same course as Chinese 166F.

Recommended preparation: one year of formal study of classical Chinese.

Selected readings in important Buddhist texts which were either originally written in Chinese or translated into that language. Only texts not available in Western language translation are chosen. Attention not only to the content but to the grammatical, syntactical, and terminological peculiarities of Buddhist Chinese.

166G. Religious Literature in Chinese: Confucian Texts
(4) POWELL

Same course as Chinese 166G.

Recommended preparation: one year of formal study of classical Chinese.

Readings in selected texts from the classical Confucian tradition (Chou dynasty), Han dynasty Confucianism and the Neo-Confucianism of the Sung and Ming dynasties.

166H. Religious Literature in Chinese: Taoist Texts
(4) POWELL

Same course as Chinese 166H.

Recommended preparation: one year of formal study of classical Chinese.

Readings in the *Lao Tzu (Tao-te-ching)* and the *Chuang Tzu* and their latter commentaries.

167A. Religion in Japanese Culture
(4) GRAPARD

Same course as Japanese 167A.

A historical analysis of the major components of the classical and medieval religious systems of Japan, through investigation of texts, rituals, and institutions.

167B. Religion in Japanese Culture
(4) GRAPARD

Prerequisite: Religious Studies 167A or Japanese 167A.

Same course as Japanese 167B.

A historical analysis of the major components of premodern Japanese ideology through investigation of texts, institutions, and rituals.

167D. Shinto
(4) GRAPARD

Same course as Japanese 167D.

A systematic analysis of the principle institutions, texts, and rituals of the Shinto traditions of Japan, in historic perspective.

168. Modern Buddhism in Sri Lanka and Its Roots
(4) STAFF

Prerequisite: Religious Studies 3 or 161A.

Introduction in-depth to Buddhism primarily Theravada Buddhism in India and Sri Lanka; work in Sri Lanka; treatment of various dimensions (practice, temple rituals, experience in meditation, ethical teaching, symbiosis of the lay public, the monks, Buddhist art, doctrine and analysis, religious phenomena, Hindu deities, etc.).

168A. The Life and Thought of the XIV Dalai Lama
(4) WALLACE

A biographical and religio-philosophical study of the present Dalai Lama and the recent history of Tibet. Attention given to his dual role as temporal and spiritual leader of Tibet, and his emergence as an international proponent of non-violence.

168B. The Pursuit of Individual Liberation in Tibetan Buddhism
(4) STAFF, WALLACE

Examines the incorporation of theories and practices of the "Individual Vehicle" of Buddhism into Tibetan tradition, and the relation of these elements with Theravada Buddhism. Readings include vinaya-based ethics, abhidharma-based psychology, and Vaibhasika and Sautrantika philosophical tenets.

168C. The Bodhisattva Ideal in Tibetan Buddhism
(4) STAFF, WALLACE

Not open for credit to students who have completed Religious Studies 164C.

Focus on the Bodhisattva ideal and way of life, as adapted to the Tibetan tradition. Readings include classics of Indian Mahayana Buddhism, Tibetan works, and works explaining the relations of Buddhist Tantra with the Mahayana tradition.

168D. Sleeping, Dreaming, and Dying in Tibetan Buddhism
(4) WALLACE

An introduction to Tibetan Buddhist theories and meditative practices concerning sleeping, dreaming, and waking and their relation to dying, the intermediate state after death, and rebirth. Readings include Padmasambhava's teachings on the six transitional processes and other readings on dream yoga.

169. Hindu Devotional Traditions
(4) HOLDREGE, WHITE

An introduction to the devotional schools and poet-saints of the Saiva, Vaisnava, and Sakta traditions. Particular attention will be given to the different paradigms of devotion represented, respectively, by the images of servant-master, child-parent, friend-companion, and lover-beloved.

170. Hindu Dharma: Law and Ethics in Indian Society
(4) HOLDREGE, WHITE

A study of the ritual, moral, and social order of Indian society, with particular attention to the dichotomy between the fulfillment of one's ritual and social duties (dharma) on the one hand and the quest for ultimate salvation (moksa) on the other.

172A. Religion and Science
(4) STAFF, WALLACE

Not open for credit to students who have completed Religious Studies 172.

The impact of western science on religion; the compatibility and complementarity of their discourses. The implications for religion of contemporary scientific theories concerning man and the universe in which he lives.

172B. Religion, Science, and the Problem of Consciousness
(4) WALLACE

Comparative exploration of the nature of consciousness as presented by western scientists and philosophers and by Hindu and Buddhist philosophers and contemplatives. Western, Indian, and Tibetan of the mind and its potentials are examined in historical contexts.

173. Religious Myth and Language
(4) STAFF

A survey of contemporary studies about the nature and function of religious symbol and language.

174. Religious Thought and Existentialism
(4) STAFF

An examination of the nineteenth- and twentieth-century literary and philosophical movement of existentialism and its implications for philosophy of religion and theology. Typical figures like Kierkegaard, Sartre, Camus, and Buber are examined.

175. Sacred Geography in China and Japan
(4) GRAPARD, POWELL

Same course as East Asian Cultural Studies 175.

A consideration of the cultural and conginitive dimensions of East Asian sacred geography.

176. Religious Contours of California
(4) STAFF

California contains virtually all the religious variety known to humankind. It serves as a window, therefore, to the world's religions. This course uses the history of California to introduce these religions.

177. Religion and Law
(4) HECHT, POWELL

A comparative study of the interrelationship of law and religion within society. Examples selected from the legal traditions of small-scale societies, the great civilizations of the past, and modern societies.

178. The Body Religious in Chinese Culture
(4) POWELL

Same course as East Asian Cultural Studies 178.

The human body both as constituted by and constitutive of Chinese religion, culture, society, and geography. Neither purely philosophical nor biological, the course explores the understandings of the body as both subject and object of knowledge.

179. Religion and Humanistic Psychology
(4) STAFF

Religion from the perspective of humanistic psychology. Emphasis on William James, Gordon Allport, Abraham Maslow, and on trends emerging out of this tradition in psychology.

180. Problems in the Philosophy of Religion
(4) STAFF

A study of the religious dimension of philosophy and the philosophical aspect of religion. Relationship between religion and philosophy cross-culturally examined.

181A-B-C. Religious Literature in Hindi
(4) STAFF

Prerequisites: Religious Studies 11A-B-C.

Selected readings in medieval and modern Hindi religious texts, and an introduction to the use of Hindi commentarial literature.

182. Ethics of the Life Cycle
(4) STAFF

A study of contrasting models of the life cycle; rites of passage; moral problems associated with birth, growth, sex, work, leisure, aging, and death.

183. The Quest for Narrative in Late Imperial China
(4) POWELL

Same course as Chinese 183.

An exploaration of quest themes, narrative forms and performative modes in the culture of Late Imperial China based on a reading of an English translation of the sixteenth century masterpiece, *The Journey to the West (Monkey).*

186. The Arabic Qur'an
(4) CAMPO

Prerequisite: Religious Studies 10F.

Systematic study of vocabulatry, grammar, syntax, and content of the Qur'an. Includes introduction to Qur'anic recitation, calligraphy, and commentary (tafsir) from historic and cultural perspectives.

187. Christian Asceticism
(4) THOMAS

The religion of the hermitage and cloister from St. Anthony and St. Benedict. Special attention to current revivals of asceticism, east-west exchanges, and the writings of Thomas Merton.

188. Western Mysticism
(4) STAFF

Study of western mystical religion from Bernard of Clairvaux, Eckhart, St. John of the Cross, St. Teresa, to Pascal, Blake, and the modern era.

189A. History of Arabic Literature in Translation
(4) REYNOLDS

Survey of the history of Arabic poetry and prose from the pre-Islamic era to the 20th century with emphasis on the development of specific genres and styles and changing historical perspectives on enduring themes in Arabic literature.

189AX. Arabic Texts
(1) REYNOLDS

Prerequisites: Religious Studies 10E; concurrent enrollment in Religious Studies 189A.

Reading and analysis of brief literary texts in Arabic selected from the authors and genres covered in Religious Studies 189A with a focus on the most famous figures and masterpieces of Arabic literary history from the fifth to twentieth centuries.

189B. Critical Reading of Medieval Arabic Literature in Translation
(4) REYNOLDS

Critical readings from a selection of medieval poetical and prose works in translation including love manuals, spiritual allegories, encyclopedias, collections of comic erotica, autobiographies, travel accounts, and others. Lectures and readings in English.

189C. Critical Readings in Modern Arabic Literature in Translation
(4) REYNOLDS

Critical readings from a selection of 19th- and 20th-century works in translation including autobiographies, novels, short stories, and poems from the Arab world. Readings will focus on issues central to modern Arab society. Lectures and readings in English.

190. Topics in Religious Studies
(4) STAFF

May be repeated for credit to a maximum of 8 units.

Recommended preparation: upper-division standing.

This course features lectures by various visiting professors or adjunct lecturers on topics pertaining to the study of religions using various methodological approaches to subjects which are the speciality of the instructor. Course content will vary.

191. Contact, Conflict, and Syncretism in Latin American Religions
(4) STAFF

Following an initial review of relevant theoretical concepts and terminology of cultural contact, the course will examine case studies of varied types of religio-cultural interfaces from Latin America.

192. Women and Religion in America
(4) STAFF

A study of women as active producers and shapers of American religious culture. Historical and contemporary perspectives. Emphasis on gender roles, women's experiences, leadership, sexuality, identity, and on ways that race and class influence American ideas about gender and religion.

193. Religion and Ecology in the Americas
(4) TALAMANTEZ

Prerequisite: a prior lower-division religious studies or environmental studies course.

Same course as Environmental Studies 189.

An overview of the growing field of religion and ecology in the Americas. Focus on spiritual traditions and land-based knowledge indigenous to the Western Hemisphere.

193B. Religion and Healing in Global Perspective
(4) ALBANESE

Comparative and cross-cultural introduction to relationships between religion, science, and healing arts, using selected case studies and stressing alternatives to mainstream Western medicine. Attention to underlying religio-philosophical worldviews and to the ways in which they influence healing practices.

194. Group Studies for Advanced Students
(1-4) STAFF

Enrollment normally limited to 12 or fewer students. Students may repeat this course once for credit, subject to departmental approval, but only 4 units may apply to the major.

Recommended preparation: a prior lower-division course in religious studies.

Topics vary according to instructor.

195. Senior Honors Program
(1-8) ROOF

Prerequisite: a prior lower-division course in religious studies.

Open only to upper-division students who have been accepted into the department's honors program.

Projects for advanced work in religious studies in conjunction with individual members of the faculty and developed by students who have qualified for the department's honors program. May be repeated once for credit.

199. Independent Studies in Religion
(1-5) STAFF

Prerequisites: a prior lower-division course in religious studies; upper-division standing; completion of two upper-division courses in religious studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

GRADUATE COURSES

200A. Proseminar in History and Theory of Religion
(4) STAFF

Critical analysis of key themes and figures in anthropology and sociology of religion, with attention to their role in the emergence and current practice of religious studies. Includes the works of such figures as Tylor, Frazer, Mauss, Lévi-Strauss, Douglas, Turner, Geertz, Durkheim, Weber, and Berger.

200B. Proseminar in History and Theory of Religion
(4) STAFF

Critical analysis of key themes and figures in modern philosophy and psychology of religion, with attention to their role in the emergence and current practice of religious studies. Includes the works of such figures as Spinoza, Hume, Kant, Hegel, Marx, Nietzsche, Heidegger, Wittgenstein, Freud, and Jung.

200C. Proseminar in the History and Theory of Religion
(4) STAFF

Prerequisites: Religious Studies 200A-B.

Critical analysis of key themes and figures in phenomenology and history of religions, with attention to their role in the emergence and current practice of religious studies. Includes the works of such figures as Otto, van der Leeuw, Pettazzoni, Wach, Eliade, W.C. Smith, Smart, Long, J.Z. Smith, and Lincoln.

200D. Proseminar in the History and Theory of Religion
(4) STAFF

Critical analysis of key themes and figures in contemporary critical theory and cultural studies, with attention to their role in the current practice of religious studies. Includes the works of such figures as Benjamin, Foucault, Bourdieu, Derrida, Lacan, Kristeva, Butler, and Taussig.

201. Core Issues in the Study of Religion
(4) STAFF

Introduces graduate students to core issues in modern studies of religions and other world views.

202A-F. Religious Literature in Pali
(4) STAFF

Prerequisite: consent of instructor.

Phonology, morphology, and syntax of the Pali language with readings of early Buddhist texts from the Pali Canon.

203. Introduction to Ugaritic
(4) GARR

Prerequisite: Religious Studies 142A.

Basic grammar of the Ugaritic language, selected readings in Ugaritic mythological literature, and discussion of the relationship between Ugaritic literature and the Hebrew Bible.

204. Religious Literature in Vedic Sanskrit
(4) STAFF

Prerequisites: Religious Studies 159A-B-C.

Phonology, morphology, and syntax of Vedic; and reading of Rig Veda I. 1, I.32, X.90, X.129, and other hymns.

205A. Religious Literature in Greek
(4) THOMAS

Selected readings in both Christian and polytheist texts.

205B. Religious Literature in Latin
(4) THOMAS

Selected readings in both Christian and polytheist texts.

205C. Religious Literature in Coptic
(4) THOMAS

Study of selected Coptic religious texts in the Sahidic, Sub-Achmimic, Achmimic, or Bohairic dialects.

206A-B-C-D-E-F. Seminar in South Asian Religious Studies
(4-4-4-4-4-4) HOLDREGE, WHITE

Prerequisites: Religious Studies 159A-B-C.

Historical and critical analysis of selected topics in South Asian religious traditions.

A. Topics in South Asian religions.
B. Vedic traditions.
C. Hindu epics.
D. Hindu mythological and devotional traditions.
E. Tantric traditions.
F. Contemporary issues.

207. Guided Readings in Sanskrit Religious Texts
(4) STAFF

May be repeated for credit.

Selected readings in classical Sanskrit, Pali, and Vedic religious texts.

208 A-B-C. Guided Readings in Hebrew Religious Texts
(4) GARR

Course content variable; may be repeated.

Selected readings in Biblical Hebrew texts. Course may be repeated.

209. Seminar on Hindus and Muslims in South Asia
(4) CAMPO, HOLDREGE, WHITE

An inquiry into the interactions of Hindus and Muslims in South Asian history and cultures. Topics include religious beliefs and rituals, social and political issues, mystical traditions, science and medicine, music, art, and literature.

210. Guided Readings in Arabic Religious Texts
(4) CAMPO

Prerequisites: Religious Studies 10A-F.

Selected readings on Islamic subjects in Arabic. Focus on scripture, interpretation, and religious biography.

211. Orality, Literacy, and the Study of Religion
(4) REYNOLDS

A survey of differing theories of orality and literacy in the writings of Havelock, Parry, Lord, Luria, Vygotsky, Ong, Goody, Graff, Stock, Tedlock, and others. The significance of these ideas for the study of religious texts, practices, and world views.

213. Seminar on Sikhism
(4) SINGH MANN

Focusing on the selected compositions of Farid (Sufi), Gorakh (Nath Yogi), Kabir (Hindu), and Nanak (Sikh), examination of the rich diversity of religions and cultural beliefs prevalent in medieval Punjab.

219. Seminar on Buddhist Epistemology
(4) STAFF

A critical examination of perceptual and conceptual ways of knowing according to Tibetan Buddhist philosophy and contemplative practice. Special emphasis is on the distinctions among perception, inference, and belief with respect to both external phenomena and the nature of the mind itself.

220. Seminar in Religion and Science
(4) WALLACE

Exploration of fundamental problems in physics in comparative analysis using examples from quantum and relativity theory and Buddhist Madhyamaka philosophy.

223. Religion and the Question of Subjectivity in Contemporary European Thought
(4) CARLSON

Exploration of critical responses within contemporary European thought to modern conceptions of subjectivity (from Luther and Descartes through Hegel and Nietzsche). Writers may include Husserl, Heidegger, Levinas, Derrida, and Marion.

227. Religion, Ethics, and the Modernity Debate
(4) ROOF, CARLSON

Examination of issues arising out of the modernity/post-modernity debate regarding religion and ethics. Topics include, among others, community tradition, identity, and agency. Special attention to the works of Giddens, Bauman, Caputo, and Dupré.

228. Seminar on Religion and Violence
(4) HECHT

Prerequisite: graduate standing.

This seminar examines the relationship between religion and violence as a new problem for the history of religions. Readings for the seminar will reflect the major theoretical positions taken in the debate over whether violence is essential or secondary to religious symbolizations.

229. The Archaeology of Religious Knowledge
(4) STAFF

An investigation of the relevance to religious studies, particularly to the history of religions, of the work of the philosopher/historian Michel Foucault.

230. Seminar in the History and Theory of Religion
(4) STAFF

Scholarly perspectives and disciplinary approaches to critical study and research in the history and theory of religion.

231. Phenomenology of Religion
(4) STAFF

The course involves an examination of some approaches to phenomenology in recent literature; and then examines specific concepts and phenomena, such as worship, shamanism, sacrament, and religious identity.

232. Seminar in Religion and Philosophy
(2-4) COMSTOCK

May be repeated for credit.

A survey of ways in which religion and philosophy have been related in the history of western civilization. Religious metaphysics, theology, and the approach of contemporary analytic philosophy to religion are considered.

233. Seminar in Religion and Literature
(2-4) COMSTOCK

May be repeated for credit.

A survey of the work of literary critics and religious thinkers who have developed connections between the study of literature and religious thought.

234. The World's Religions: Learning and Teaching Them
(4) STAFF

Prerequisite: graduate standing.

Introduction to religions, explains and explores ways of understanding them and discusses modes of teaching them. Aimed to explain issues where the activities of religions affect theory; as well as sketching issues of pedagogy.

23S. Seminar in Western Religious Thought
(4) THOMAS

Historical and critical examination of selected figures and movements.

236. Philosophy of Religion: European Foundations
(4) CARLSON

A seminar on the philosophy of religion in eighteenth- and nineteenth-century Europe. Emphasis given to the specifically Christian genealogy of the general concept of religion. Thinkers covered may include Hume, Kant, Schleiermacher, Hegel, and Nietzsche.

237. Seminar in Religion and Psychology
(4) ROOF

A review of major theorists in the psychology of religion, including Freud, Jung, Maslow, Erikson, Kohlberg, and others, and their significance for the field of religious studies.

239. Seminar in Religion and Ethics
(4) ROOF

A review of theory and research on religion and ethics. Topics include moral pluralism, modes of religious thinking about behavior, and selected moral problems in the contemporary world.

240. Seminar in the Sociology of Religion
(4) HAMMOND, ROOF

Course content variable; may be repeated.

Detailed examination of major figures, schools, and types of research.

243. Seminar in Religion & Society: Research Methods
(4) ROOF

Prerequisite: consent of instructor

Applied research experience, with attention to practical aspects of research such as interviewing, field work, analysis, and write-up.

244. Problems in Religion and Society
(4) HAMMOND, ROOF

Prerequisite: graduate standing.

Course content variable; may be repeated.

Influence of religion upon society and society upon religion; institutional roles; transcendent referents; law and justice; value conflicts. Analysis of the thought of one or more major figures.

24SA. Seminar in African-American Religious History
(4) STAFF

Prerequisite: consent of instructor.

A historical examination, beginning with West African heritage, of Afro-American religious leaders and organizations in the United States during slavery and until the end of the nineteenth century.

24SB. Seminar in African-American Religious History
(4) STAFF

A historical survey of major Black religious figures, organizations, movements, philosophies, and issues. Emphasis on contemporary religious phenomena in the Black religious community of the United States during the twentieth century.

246. Seminar in Comparative Mysticism
(4) STAFF

Historical and comparative analysis of selected mystical traditions in the East and the West.

247. Seminar in Native American Religious Traditions
(4) TALAMANTEZ

Course content variable; may be repeated.

Historical and critical examination of selected figures, categories, and phenomena pertaining to the diversity of Native American religious traditions.

249. Islam in the History of Religions: Basic Problems
(4) CAMPO

Prerequisite: Religious Studies 140 A or 140B or 140C or D or 200 A or 200B or 200C.

Analysis of selected issues that highlight the continuities and discontinuities between the study of Islam and the comparative study of religions—e.g., texts and contexts, sacred space and time, ritual, society, human-divine relations, peace and violence, saints.

2S0. Seminar in the History of Religions
(4) STAFF

Course content variable; may be repeated.

Comparative study of selected religious structures or symbols, from eastern and/or western religious traditions.

251A. Seminar in Hellenistic Religions
(4) THOMAS

Prerequisite: reading knowledge of Greek required.

Course content variable; may be repeated for credit. Not open for credit to students who have completed Religious Studies 251.

Historical and critical examination of selected figures, texts, and phenomena pertaining to Graeco-Roman religion.

2S1B. The Novelistic Impulse in Religious Texts
(4) THOMAS

Examination of the development of interiority, the construction of a religious self, the narrative presentation of the divine, and the articulation of genre in ancient texts ranging from epic to novel to hagiography, guided by selected readings in modern literary theory.

2S2A. Seminar in Christian Origins
(4) THOMAS

Prerequisite: Religious Studies 116A.

Course content variable; may be repeated. Not open for credit to students who have completed Religious Studies 252.

Historical and critical examination of selected figures, ideas, and movements pertaining to nascent Christianity.

252B. Asceticism and the Construction of Self
(4) THOMAS

Survey of the relationship between humanity and holiness, self and other, in the focal point of the physical body and its disciplined management, beginning with Christian late antiquity and employing examples from a variety of religious traditions.

2S3. Seminar in Hellenistic Judaism
(4) HECHT

Recommended preparation: knowledge of Greek or Hebrew highly recommended.

Historical and critical examination of selected figures, texts, and phenomena pertaining to Judaism in the Graeco-Roman world, and its interaction with Hellenistic culture and religion.

2S7. Seminar in Buddhist Studies
(4) STAFF

Historical, philosophical, and bibliographic analysis of selected traditions within Buddhism. Also, consideration of the relation of Buddhist traditions to related phenomena within Hinduism.

2S8. Seminar in Religion in America
(4) ALBANESE

Prerequisite: graduate standing.

May be repeated.

Examination of selected topics in American religion to investigate its basic religious structures and to explore the relationship of religious phenomena to their cultural context. Course content variable.

2S9. Topics in East Asian Buddhist Thought
(4) POWELL

Prerequisite: graduate standing.

Same course as East Asian Cultural Studies 259.

A historical and critical analysis of selected issues in the development of Buddhist thought in China, Korea, and Japan.

260. Seminar on Religion and Art in South Asia
(4) STAFF

A study of the relation between the religious and

the aesthetic in the cultures of South Asia, with special reference to the morphology and iconography of the mother goddess.

262. Seminar in Comparative Philosophy of Religion
(4) STAFF
Prerequisites: Religious Studies 200A-B-C.
Study of the basic principles for doing systematic religious thought in a cross-cultural context, based on a critical reading and analysis of selected systematic thinkers—e.g., Nagarjuna, Plotinus, Sankara, Chu Hsi, Aquinas, Kant, Hegel, et al.

263A-B. Seminar on Religion and Societal Change
(4-4) HECHT
Same course as Sociology 263A-B. May be repeated.
This seminar examines the role of religion in societal change.
A. Will discuss major theories from Durkheim and Weber to Rokkan and Foucault.
B. Will consider specific cases which will vary from year to year.

264. Problems in the Study of Japanese Religions
(4) GRAPARD
Prerequisites: Religious Studies 200A-B-C.
An analysis of methodological issues raised by the study of Japanese religions; their relevance for the field of history of religions.

265. Problems in the Study of Chinese Religions
(4) POWELL
May be repeated for credit up to 8 units.
Consideration of basic problems and methodological issues in the study of Chinese religions.

266. Race, Religion, and Community
(4) STAFF
An examination of the interplay of race and religion in the formation of Chicano, African-American, Asian-American, and Native American communities.

270. Seminar in Religious Myth and Symbol
(4) COMSTOCK, HOLDREGE
A detailed survey of important approaches to religious myth and symbolism. The various methods of literary analysis, anthropological and sociological study, linguistic analysis, and the phenomenology of religion will be considered.

289A. Guided Readings in the History of Arabic Literature
(4) REYNOLDS
Prerequisites: Religious Studies 10A-F or 148A-C.
Survey of the history of Arabic poetry and prose from the Pre-Islamic era to the 20th century with emphasis on the development of specific genres and styles and changing historical perspectives on enduring themes in Arabic literature.

289B. Guided Readings in Medieval Arabic Literature
(4) REYNOLDS
Prerequisites: Religious Studies 10A-F or 148A-C.
Critical readings from a selection of medieval poetical and prose works in Arabic including love manuals, spiritual allegories, encyclopedias, collections of comic erotica, autobiographies, travel accounts, and others. Lectures in English.

289C. Guided Readings in Modern Arabic Literature
(4) REYNOLDS
Prerequisites: Religious Studies 10A-F or 148A-C.
Critical readings from a selection of 19th- and 20th-century works in Arabic, including autobiographies, novels, short stories, and poems from the Arab world. Readings will focus on issues central to modern Arab society. Lectures in English.

290. Seminar in Major Texts and Figures
(4) STAFF
Course content variable; may be repeated.
Seminar focuses on an intensive study of a major text or figure within a religious tradition.

291. Seminar in Hebrew Bible
(4) GARR, HECHT
Prerequisites: Religious Studies 115A; and, Religious Studies 142A or 142B.
Course content variable; may be repeated.
Critical examination of selected texts in the Hebrew Bible, as well as interpretive and historical problems pertaining thereto.

294. Seminar on Cultural Analysis
(4) FRIEDLAND
Using religion as its primary site, exploration of interpretations and explanations of the structure and practice of sacred phenomena, including embodiment, symbol, narrative, myth and ritual, architecture and technology, and power and institution. Theories and topics will vary.

292. Special Topics
(4) STAFF
Seminar in special areas of interest in religious studies. Specific course titles to be announced by the department each quarter offered. Course content will vary.

591. T.A. and Associate Training Program
(1-4) STAFF
May be repeated; no unit credit allowed toward advanced degree.
Required orientation and on-the-job training of teaching assistants and associates through consultations with instructors, evaluation of their teaching through videotapes or other means of observation, follow-up consultations, teaching, evaluation.

592. Directed Reading
(1-12) STAFF
Course content variable; may be repeated.
Special readings selected under guidance of individual instructor to help students make up particular gaps in their intellectual backgrounds that are pertinent to their graduate program.

593. Colloquium
(4) STAFF
Course content variable; may be repeated.
A series of discussions involving panels, debates, special speakers, etc. at which the presence of all enrolled graduate and selected faculty is required.

594AA-ZZ. Special Topics
(1-12) STAFF
Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies
(1-12) STAFF
Critical review of research in selected fields.

596. Directed Reading and Research
(1-12) STAFF
Research and preparation of dissertation.

597. Individual Study for Master's or Ph.D. Examinations for Advancement to Candidacy
(1-12) STAFF
No unit credit allowed toward advanced degree.

598AA-ZZ. Master's Project Research and Preparation
(1-12) STAFF
No unit credit allowed toward advanced degree.
For research underlying the project, writing the project.

599AA-ZZ. Ph.D. Dissertation Preparation
(1-12) STAFF
Terminal preparation of the dissertation.

Language Offerings in Religious Studies

Arabic: see 10A-F, 148A-B-C, 210, 289A-B-C
Chinese: see 166F-H
Coptic: see 139C-D-E, 205
Greek: see 139A-B
Hebrew: see 17A-B-C, 142A-B-C, 208A-B-C
Hindi: see 11A-B-C-D-E-F, 181A-B-C
Pali: see 202A-F
Sanskrit: see 159A-L, 204, 207
Syriac: see 122A-B-C
Targumic Aramaic: see 121A-B
Tibetan: see 30A-B-C-D-E-F
Ugaritic: see 203

Renaissance Studies

Renaissance Studies Program, Division of Humanities and Fine Arts, Department of English, South Hall 2607; Telephone (805) 893-3441
Program Chair: Michael O'Connell

Renaissance Studies Advisory Committee

Ann Adams, Ph.D. (History of Art and Architecture)
Antonio Cortijo, Ph.D. (Spanish and Portuguese)
Michael O'Connell, Ph.D. (English)
Cynthia Skenazi, Ph.D. (French and Italian)

Affiliated Faculty

Juan Bautista Avalle-Arce, Ph.D. (Spanish and Portuguese)
Hilary Bernstein, Ph.D. (History)
Lee Bliss, Ph.D. (English)
Cynthia Brown, Ph.D. (French and Italian)
Robert Egan, Ph.D. (Dramatic Art)
Abraham Friesen, Ph.D. (History)
Patricia Fumerton, Ph.D. (English)
Anita Guerrini, Ph.D. (History and Environmental Studies)
Richard Helgerson, Ph.D. (English)
Gerhart Hoffmeister, Ph.D. (Germanic, Slavic, and Semitic Studies)
Carol Lansing, Ph.D. (History)
J. Sears McGee, Ph.D. (History)
Mark Meadow, Ph.D. (History of Art and Architecture)
Robert Potter, Ph.D. (Dramatic Art)
William Prizer, Ph.D. (Music)
Mark Rose, Ph.D. (English)
Jon Snyder, Ph.D. (French and Italian)
Robert J. Williams, Ph.D. (History of Art and Architecture)

The interdisciplinary major in Renaissance studies is intended to serve students interested in an undergraduate liberal arts major, as well as those who plan to pursue graduate studies in the field. Coursework leading to a B.A. in Renaissance studies may be done in English and European literatures, history, art, and music. With the assistance of members of the advisory committee, students will set up individual programs structured by their special interests. Students should consult with their advisors each quarter from the beginning of their junior year to have their programs formally approved and to learn about special Renaissance studies

courses. Students are also encouraged to consider spending one of their undergraduate years in a European university through the Education Abroad Program.

Students with a bachelor's degree in Renaissance Studies who are interested in pursuing a California Teaching Credential should contact the Credential Advisor in the Graduate School of Education.

Undergraduate Program

Bachelor of Arts—Renaissance Studies

Preparation for the major. History 4A-B and a reading knowledge of Latin or a modern European language to be certified by examination. Recommended: Art History 6C; Classics 37, 38, 40; English 20.

Upper-division major. Forty upper-division units are required, including (1) History 121A-B; (2) Renaissance Studies 100; and (3) 28 additional units from the following list, with the selection forming a coherent unit that must be approved by a member of the advisory committee; courses other than these, with appropriate focus and content, may be petitioned to apply with the approval of the program chair.

Art History 107A-B, 109B
Classics: a maximum of 12 units chosen in consultation with a faculty advisor
Dramatic Art 160B
English 102A, 117A-B-C-E, 118, 144, 145, 146, 151D, 151S, 157, 162
French 106A, 140A-B-C, 141X, 149
German 167
History 106A, 114C, 122A-B, 140A-B-P, 150A-B, 153, 154A, 155A, 156A
Italian 139X-Y
Music 102, 112B, 180
Portuguese 105A-B, 114, 132A-B
Religious Studies 100
Renaissance Studies 199
Spanish 110B, 115A, 123A, 131, 134, 137A-B, 140A-B, 141

Renaissance Studies Courses

UPPER DIVISION

100. Studies in Renaissance Civilization
(4) STAFF

Course may be repeated for credit with consent of program chair.

An introduction to the interdisciplinary study of Renaissance civilization. Specific topics will vary from year to year and may include such subjects as Medici Florence, fifteenth-century Burgundy, Renaissance Neo-Platonism, Renaissance humanism, or Renaissance Petrarchism.

199. Independent Studies in the Renaissance
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in renaissance studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Not more than 12 units total of Renaissance Studies 199 may be taken.

Study or research under the guidance of a member of the advisory committee for seniors of high scholastic standing. Students wishing to enroll should prepare a short plan of study for their coursework.

Sociology

Department of Sociology,
Division of Social Sciences,
Ellison Hall 2834;
Telephone (805) 893-3314
Undergraduate e-mail:
ugrad-soc@sscf.ucsb.edu
Graduate e-mail: grad-soc@sscf.ucsb.edu
Web site: www.soc.ucsb.edu
Department Chair: Beth E. Schneider

Faculty

Richard P. Appelbaum, Ph.D., University of Chicago, Professor (urban political economy, community development, public policy, Marxism, global labor, global economic systems)

Janice I. Baldwin, Ph.D., UC Santa Barbara, Lecturer (human sexuality, gender, AIDS)

John D. Baldwin, Ph.D., Johns Hopkins University, Professor (G. H. Mead, human sexuality, socialization, capitalism, micro-macro synthesis)

Kum-Kum Bhavnani, Ph.D., Cambridge University, Professor (third-world women, cultural studies, feminist studies, critical ethnography, critical psychology)

Denise D. Bielby, Ph.D., University of Wisconsin, Professor (gender, popular culture, work, aging and the life course)

William T. Bielby, Ph.D., University of Wisconsin, Professor (organizations, quantitative methods, popular culture, labor market discrimination)

Jon D. Cruz, Ph.D., UC Berkeley, Associate Professor (social theory, culture, race and ethnicity, knowledge)

G. Reginald Daniel, Ph.D., UC Los Angeles, Assistant Professor (race and ethnic relations, comparative and historical sociology, comparative race and culture)

Mitchell Duneier, Ph.D., University of Chicago, Associate Professor (race and ethnic relations, gender, law, urban sociology, qualitative methods)

Simonetta Falasca-Zamponi, Ph.D., UC Berkeley, Associate Professor (sociology of culture, political sociology, historical sociology, Western European studies)

Sarah Fenstermaker, Ph.D., Northwestern University, Professor (work and gender, feminist inquiry, feminist theory)

Richard Flacks, Ph.D., University of Michigan, Professor (political sociology, social movements, political consciousness, student culture)

John Foran, Ph.D., UC Berkeley, Professor (development and social change, Middle Eastern studies, Latin American studies, comparative historical methods, social theory, political sociology, social movements, cultural studies)

Noah E. Friedkin, Ph.D., University of Chicago, Professor (social psychology, social networks, sociology of education)

Roger O. Friedland, Ph.D., University of Wisconsin, Professor (cultural theory; architecture; religious nationalism; institutional theory; space, time, and social theory)

Avery F. Gordon, Ph.D., Boston College, Associate Professor (social theory, race, culture, feminist studies)

Mark Juergensmeyer, Ph.D., UC Berkeley, Professor (South Asian religion and society, sociology of religion, religious nationalism, terrorism, moral community, and social ethics)

Gene H. Lerner, Ph.D., UC Irvine, Associate Professor (conversation analysis, social life of very young children, social aspects of syntax)

John Mohr, Ph.D., Yale University, Associate Professor (complex organizations, historical sociology, welfare state, culture)

Harvey L. Molotch, Ph.D., University of Chicago, Professor (urban growth, media studies, environment, economy and society)

Ilene H. Nagel, Ph.D., New York University, Professor (sociology of law, white collar and corporate crime)

Beth E. Schneider, Ph.D., University of Massachusetts, Professor (sexuality, feminist and gender theory, social movements, health/AIDS, lesbian/gay studies)

Gary I. Schulman, Ph.D., Stanford University, Associate Professor (social psychology, methods, sex roles, small groups analysis, hypnosis as a research tool)

Denise Segura, Ph.D., UC Berkeley, Associate Professor (Chicana/Chicano studies, feminist studies, gender, family, work, race-ethnic relations)

Bruce C. Straits, Ph.D., University of Chicago, Associate Professor (personal networks, methodology, social demography)

John R. Sutton, Ph.D., UC Davis, Professor (organizations, law/social control/deviance, comparative sociology, culture)

France Winddance Twine, Ph.D., UC Berkeley, Associate Professor (racism/anti/racism, critical race theory, feminist theory, transracial/multiracial families, visual ethnography, popular culture, the African Diaspora–Brazil, U.S., U.K., Brazilian studies)

Raymond Sin-Kwok Wong, Ph.D., University of Wisconsin, Associate Professor (social stratification, comparative sociology, methods and statistics, sociology of economic change, demography)

Don H. Zimmerman, Ph.D., UC Los Angeles, Professor (conversation analysis, analysis of natural settings, ethnomethodology)

Emeriti Faculty

Otis Dudley Duncan, Ph.D., University of Chicago, Professor Emeritus

Sethard Fisher, Ph.D., UC Berkeley, Professor Emeritus

Morris F. Friedell, Ph.D., University of Chicago, Associate Professor Emeritus

David Gold, Ph.D., University of Chicago, Professor Emeritus

Thomas J. Scheff, Ph.D., UC Berkeley, Professor Emeritus

Tamotsu Shibutani, Ph.D., University of Chicago, Professor Emeritus

John A. Sonquist, Ph.D., University of Chicago, Professor Emeritus

Thomas P. Wilson, Ph.D., Columbia University, Professor Emeritus

Affiliated Faculty

Ralph J. Armbruster, Ph.D. (Chicano Studies)

William Felstiner, J.D. (Law and Society)

Phillip E. Hammond, Ph.D. (Religious Studies)

Oyeronke Oyewumi, Ph.D. (Black Studies)

Wade Clark Roof, Ph.D. (Religious Studies)

Mayfair Yang, Ph.D. (Anthropology)

Sociology is the systematic study of social life. Through empirical inquiry, sociologists seek to understand the process by which societies, communities, institutions, and organizations are created, maintained, undermined, and transformed, and the ways in which social life shapes individuals.

The Department of Sociology is composed of scholars who are internationally recognized contributors to the discipline. It is known for its diversity of perspective and particularly for its support for emerging areas of study and innovative approaches to theory, method, and empirical inquiry. The department has distinctive strength in quantitative methods of research and analysis. It participates in the Social Science Computing Facility (SSCF) which provides instructional computing support. The SSCF offers access to computers, the Internet, software consultation, and technical assistance. The department is also affiliated with the Institute for Social, Behavioral, and Economic Research, which conducts global policy related research in the social sciences.

The requirements for the sociology major are designed to provide students with a thorough grounding in the theory and methodology of the discipline and their rigorous application to empirical inquiry. In addition to providing the core of a liberal arts education, the sociology major can also serve as preparation for graduate study for a career as a professional sociologist. Finally, the major may be used as preparation for a career in such fields as law, management, urban and environmental planning, corrections, journalism, teaching, social work, and other service professions.

Students with a bachelor's degree in sociology who are interested in pursuing a California Teaching Credential should contact the Credential Advisor in the Graduate School of Education as soon as possible.

Honors Program in Sociology

As part of our participation in the College of Letters and Science Honors Program, the department offers introductory-level sociology honors classes (Sociology 1H, 2H, 3H, and 4H), which are taught by the course professor, thus providing students with a unique opportunity for small group interaction with the instructor. A range of upper-division honors courses (195H, 197H, 198H) are also offered on a regular basis. In addition, eligible undergraduates may, with consent of the instructor, elect to fulfill an honors contract for any course. Eligible upper-division honors students may also participate in graduate courses numbered 200-299 by petition.

In addition to the general honors program, the Department of Sociology offers a three-quarter honors research practicum (196H-HR-HT). Students enrolled in this seminar complete an original research project on a topic of their choice. To be eligible for the honors practicum in sociology, students must have completed 105 units, including Sociology 1, 2, 3, and 4, have a minimum 3.5 cumulative grade-point average with a 3.5 grade-point average in upper-division sociology courses, and have completed at least 16 graded units in upper-division sociology courses at UCSB. In addition, it is strongly recommended that students interested in the honors research practicum acquire competency in the methodological area related to their specific research topic.

All qualified students are invited to apply at the Department of Sociology office before the end of the spring quarter prior to the year of requested admission to the practicum series. All students must submit a writing sample from a social science course, excluding take-home examinations. All final decisions for admission to the honors program will be made by the program coordinator and will be based on the writing sample, standing in the major, and cumulative grade-point average. Students not meeting the minimal requirements may be nominated for consideration by a member of the faculty.

Graduation with Distinction

To be eligible to graduate with Distinction in the Major, honors students must complete, with a grade of B or better, a minimum of two graduate seminars in sociology and the three quarter honors research practicum which includes the presentation of an honors thesis. Students must also maintain a 3.5 cumulative grade-point average and a 3.5 grade-point average in upper-division sociology courses.

Alpha Kappa Delta. The Department of Sociology also sponsors the Tau of California Chapter of Alpha Kappa Delta, the national sociology honors society. Membership in Alpha Kappa Delta is restricted to outstanding seniors with a cumulative grade-point average of at least 3.5, and with a 3.5 grade-point average in sociology units taken at UCSB.

Undergraduate Program

Prospective majors are expected to consult the department undergraduate academic advisor about all aspects of planning a program in sociology. Before admission to the sociology major, students must complete all sociology preparation for the major courses as specified below. Preparation for the major courses may not be taken on a passed/not passed basis. Students may declare the pre-sociology major after completion of at least one of the pre-major sociology courses (i.e., Sociology 1, 2, 3, or 4) with at least a 2.3 GPA in all pre-major courses completed at that time, and a 2.0 overall GPA. Students who declare the pre-major are responsible for satisfying degree requirements

Avery Gordon

ASSOCIATE PROFESSOR, SOCIOLOGY

Associate professor Avery Gordon has four goals as a teacher. The first is to foster her students' independent and critical thinking skills and make them comfortable learning new things. Second, she hopes to inspire her students to identify their own special talents so they can make meaningful contributions to society. Her third goal is to help them understand how absolutely crucial cultural and theoretical knowledge are to addressing pressing social problems and to understanding our society and its history. Finally, she hopes to demonstrate that interdisciplinary research and teaching are complementary pursuits. "I present my research to the students and learn from their questions and feedback," she explains. "I also encourage students to see themselves as researchers seeking answers to important questions."

"I also encourage students to see themselves as researchers seeking answers to important questions."

Gordon teaches undergraduate courses on American culture, social theory, and the sociology of art and literature.

in effect at the time they declare the major. Pre-major status does not, however, guarantee admission to full major status. When pre-major requirements are satisfied, students should complete a change of major petition, available in the sociology undergraduate advising office, to declare full major status.

Bachelor of Arts—Sociology

Preparation for the major. To qualify for admission into the sociology major, students must complete Sociology 1, 2, 3 (or a PSTAT 5 series course), 4, and History 17B and 17C with a grade-point average of 2.3 or above. Sociology 3 (or a PSTAT 5 series course) should be completed before Sociology 4, which presupposes some knowledge of basic statistical concepts.

In addition, students must complete two courses from the following (excluded as part of the pre-major grade-point average computation but must be taken for letter grades): Anthropology 2, 10; History 7, 17A; Economics 2 or 109; Political Science 1, 6, 7, or 12; Environmental Studies 2, 3; Psychology 1; Geography 5, Philosophy 3, 4, and 7.

The concepts of diversity and ethnicity are fundamentally related to many of the sociological theories and issues considered in upper-division sociology courses. Therefore, the department requires that, in addition to fulfilling the Letters and Science ethnicity requirement, students take a diversity course from the following list (excluded as part of the pre-major grade-point average computation but must be taken for letter grades): Asian American Studies 1, 2, 3, 5, 8; Black Studies 1, 3, 5, 6, 15, 20, 50; Chicano Studies 1A, 1B, 1C; History 10, 11A, 11B; Women's Studies 10, 20, 30, 40, 60, 70.

Upper-division major. Forty upper-division sociology units are required, with at least 28 units taken from courses numbered 102-189, inclusively, distributed as follows:

One methods course chosen from Sociology 104A, 107, 108AA-ZZ, 136Q, 136V, 141S, 148MA-MB.

One theory course chosen from Sociology 185A-Z.

One stratification/inequality course chosen from Sociology 122, 126U, 128, 130, 130LA, 130ME, 134, 134R, 137E, 139A-B-C, 144, 153, 154F, 155A-B-M-R-W, 156A-B, 159LG.

Two courses chosen from one of the following nine subject areas:

I. Methods of Sociological Research and Data Analysis (Sociology 104A, 104B, 107, 108AA-ZZ, 112A, 112B, 113A-B-C, 136Q, 136V, 141S, 148MA-MB).
II. Gender (Sociology 151, 153, 155A, 155AG, 155B, 155M, 155R, 155T, 155W, 159S).
III. Life Course, Socialization, and Interpersonal Relations (Sociology 138, 140, 142, 143, 147, 152A, 152B, 152C, 154A, 154F).
IV. Culture, Conversation Analysis, and Communication (Sociology 118C, 118G, 118J, 118L, 118M, 118R, 119A, 119B, 133, 136, 136I).
V. Stratification, Inequality, and Ethnicity (Sociology 122, 126U, 128, 129, 134, 137E, 139A-B-C, 144, 144S, 156A-B, 156LA, 159LG).
VI. Social Organization and Change (Sociology 102, 111, 126, 131, 131H, 134R, 134T, 138G, 148, 148P, 157, 160, 164, 167, 168E).
VII. Economy, Society, and Demography (Sociology 123, 130, 130CC, 130CS, 130LA, 130ME, 130SA, 166, 166W).
VIII. Deviance and Social Control (Sociology 170, 171, 172, 173, 174, 175, 176A, 176D, 177).
IX. Sociological Theory (Sociology 185A-Z).

Two additional courses chosen from any of the remaining eight subject areas.

Students may choose the remaining 12 units from upper-division sociology courses.

Note: The same course may not be used to fulfill the requirements in more than one of the areas listed above. The upper-division stratification/inequality course may also fulfill the General Education Ethnicity Requirement for the pre-major, if applicable.

The following restrictions apply to the major: only 4 units each of Sociology 119A-B and 191EA-EZ will apply to the upper-division major. In certain cases where there is clear programmatic relevance, the student may propose for consideration a maximum of 8 units of upper-division work in closely related fields as part of the 40 required units; however, these may not be substituted for specifically required courses. Acceptance is contingent upon approval of the department chair. Up to 8 units combined of the following courses may be taken P/NP for major credit: Sociology 190A, 190CH, 191B, 191CA, 191EA-EZ, 194, 195H, 197H, 198, 199; all other major courses must be taken for letter grades.

Recommended Programs

Students considering graduate training for careers as professional sociologists are advised to take Sociology 185A to fulfill the upper-division theory requirement. This course offers integrated perspective on the traditions of sociological theory as a whole rather than concentrating on a single subfield, and it is appropriate for graduate school preparation. Students preparing for graduate study are encouraged to complete one upper-division methods course in addition to the course they select to fulfill the methods requirement. Additionally, students should use the upper-division elective units (12) to increase their exposure to other areas in sociology. They should also seek individualized reading or research projects with faculty members. Students who anticipate applying for graduate school should discuss their programs at an early stage with the undergraduate advisor and a faculty member.

Students considering a career in public and social affairs should plan their programs with graduate study in mind, as such careers typically require study at the master's level in urban planning, social work, public affairs, business, law, or sociology. A program in public and social affairs should involve a background in methods and analysis, a foundation in computer skills, a basic knowledge of societal organization and change, a special focus on urban programs, and an in-depth knowledge of one or more additional areas of particular interest. Field experience through an internship is strongly recommended.

Students interested in acquiring technical skills in data management for careers in government, research, or business firms are advised to learn not only the technical aspects of research, but the sociological dimension as well: the institutional settings that frame policy-related problems, ways to formulate and conduct research programs, and intelligent interpretation of the results of analysis. Students should consult with an advisor to plan an appropriate program.

Graduate Program

In addition to departmental requirements, candidates for graduate degrees must meet the university degree requirements described in the chapter "Graduate Education at UCSB."

Admission

The department does not admit students for terminal M.A. degrees. Because the M.A. program in sociology is designed to prepare students for the Ph.D. program, students should normally apply for admission to both. However, continuation to the Ph.D. is dependent upon the student's ability to conduct research at the Ph.D. level. Applications are accepted for fall quarter admission only; the deadline for applications and financial support is December 31.

Applicants should have training substantially equivalent to the undergraduate major in sociology at UCSB, including research methods, statistics, and the development of sociological theory. Students may be admitted to the M.A./Ph.D. program with inadequate background in these areas but are expected to make up deficiencies during their first year of study. Students admitted with a M.A. in sociology earned elsewhere who do not have training substantially equivalent to that required for the B.A. and M.A. in sociology must remedy deficiencies in training within two years of being admitted to the Ph.D. Program.

In addition to departmental requirements for admission, applicants must fulfill university requirements for admission to graduate status described in the chapter "Graduate Education at UCSB." Applicants must submit scores on the Aptitude Test of the Graduate Record Examination (GRE) and a sample of written work in sociology.

Master of Arts—Sociology

Degree Requirements

The M.A. degree follows the university's Plan 1, culminating in a thesis, with the following additional requirements: 36 units of coursework completed with the grade of B or better, of which at least 20 must be graduate units; successful completion of the department's graduate-level theory and quantitative analysis sequences; and one additional methods course or sequence. The thesis is based on empirical research. Following successful submission of the thesis, the student undergoes an oral comprehensive examination. Required coursework must be completed by the end of the quarter in which the examination is taken. The student's advisory committee supervises the thesis

research, administers the comprehensive examination, and certifies completion of required coursework.

To receive an M.A. degree the student must receive a "pass" or higher grade on the comprehensive examination; to continue in the Ph.D. program, the student must receive a "high pass" or an "honor pass." The M.A. program should normally be completed by the end of the second year, but a student may petition for an extension.

Doctor of Philosophy—Sociology

Degree Requirements

Each student must pass a written preliminary examination in two areas of specialization, and successfully complete one additional methods course beyond that required for the M.A. To advance to candidacy for the doctorate, the student must pass an oral qualifying examination administered by a committee approved by the graduate dean. All coursework for the Ph.D. must be completed with the grade of B or better. This examination normally focuses on the student's major area of specialization and proposed research. No foreign language is required, but a student whose speciality requires knowledge of such a language will be required to demonstrate competence.

The candidate must complete a dissertation and will be called upon for an oral defense.

Optional Ph.D. Emphasis in Human Development

Students pursuing a Ph.D. in this department may petition to add an emphasis in human development. The interdisciplinary program in human development (IHD) involves faculty from the Ph.D. programs in communication, counseling/clinical/school psychology, education, linguistics, psychology, and sociology. The program focuses on developmental theory and research across the lifespan, and may be particularly relevant to the dissertation research of some students. The program features a structured set of courses which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in human development must fulfill the following requirements in addition to the requirements for the Ph.D. in their home department: (1) six quarters of proseminar Interdisciplinary 592; (2) four courses in addition to the proseminar, two of which must be outside the student's home department; (3) a minimum of one member of the student's doctoral committee must be a ladder faculty member officially affiliated with the interdisciplinary program in human development. Consult the department for additional information.

Optional Ph.D. Emphasis in Language, Interaction, and Social Organization

Students pursuing a Ph.D. in the Departments of Education, Linguistics, or Sociology may petition the department to add an interdisciplinary emphasis in language, interaction, and social organization (LISO). This emphasis draws upon three approaches: interactional functional linguistics, ethnomethodology and conversational analysis, and interactional sociolinguistics.

In addition to the emphasis requirements below, students must satisfy the requirements for the Ph.D. in their home department. Work in satisfaction of departmental Ph.D. requirements may also be used to satisfy emphasis requirements. (1) The emphasis requires one quarter of Sociology 212R, Introduction to the Analysis of Recorded Interaction, and four quarters of Linguistics/Sociology/Education 274, Proseminar in Language, Interaction, and Social Organization, for credit. (2) Students must complete a minimum of three elective courses from the courses listed below or other LISO approved electives. Two of the elective courses must be from the same department outside the student's home department; only one elective course may be in the student's home department: Linguistics 201, 209, 212, 214, 227, 228, 237, 260, or 266; Sociology 236, 236I, 236V, 242 (Note: Sociology 236 is prerequisite for the subsequent courses in the sociology series); Education 221B, 221C, 270G, or 270XX. (3) Students must complete a research project; the project must be supervised by at least one participating faculty member. This requirement can be satisfied in either of two ways: (a) Completing a paper reporting a post-M.A. research project under the supervision of a participating faculty member. The paper must present an analysis of interactional data and display command of the relevant literature. It must be written up in publishable form, though actual publication is not a requirement. (b) Successfully defend a dissertation centrally addressed to questions concerning language, interaction, and social organization; at least one member of the student's qualifying examination and dissertation committee must be a faculty member affiliated with LISO.

Questions or requests for additional information may be directed either to a participating faculty member or to LISO, c/o the Department of Sociology, UCSB, Santa Barbara, CA 93106.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences (QMSS)

Students pursuing a Ph.D. in this department may petition to add an interdisciplinary emphasis in quantitative methods in the social sciences (QMSS). This new interdisciplinary emphasis involves faculty from the Ph.D. programs in communication, economics, education, geography, political science, psychology, sociology, and statistics and applied probability. The areas of specialization of the participating faculty include advanced regression modeling techniques, multivariate statistics, bootstrap estimation methods, demography, econometrics, psychometrics, social network theory, mathematical psychology, spatial statistics, survey research, and educational and psychological assessment. The QMSS emphasis helps students to attain the competencies needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methodologies, and participation in interdisciplinary colloquia and research projects.

Each admitted student will develop, with his or her advisor, an individual contract listing the QMSS requirements to be completed. The contract must include the following:

- Two quarters of calculus, one quarter in linear algebra, and a one-year statistics sequence (These requirements can be waived if equivalent courses have already been completed).
- Attendance for at least three quarters at the ongoing QMSS seminar series, including presentation of at least one paper.
- Completion of at least three quantitative methods courses (excluding those listed above) or at least two of which are outside the student's home department.
- A Ph.D. dissertation that is centrally focused on an issue that is appropriate to the QMSS emphasis. The dissertation may make a contribution to methodological theory or may involve an advanced or innovative application.
- A dissertation committee that includes at least one QMSS faculty member from outside the student's home department.

Consult the department for additional information.

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students previously admitted to a Ph.D. program in art history, English, French, German, history, religious studies, or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Sociology Courses

LOWER DIVISION

1. Social Organization
(4) STAFF

The systematic study of human society; the structure of social groups, institutions, and societies, and their relationships to cultural patterns.

1FS. Freshman Seminar
(4) STAFF

May not be repeated for credit.

A seminar specifically for freshmen discussing current topics of interest in sociology. Topics will vary depending on the professor teaching.

1H. Social Organization—Honors
(1) STAFF

Prerequisites: concurrent enrollment in Sociology 1 and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of 5 units in Sociology 1-1H.

2. Social Psychology
(4) STAFF

Not open for credit to students who have completed Sociology 2W.

An introduction to social psychology theory and research. Topics include interpersonal relations, the relationship of individuals to social institutions, conformity, persuasion, aggression, prejudice, and sexuality.

2H. Social Psychology—Honors
(1) STAFF

Prerequisites: concurrent enrollment in Sociology 2 and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of 5 units in Sociology 2-2H.

2W. Social Psychology
(4) STAFF

Not open for credit to students who have completed Sociology 2.

An introduction to social psychology theory and research. Topics include interpersonal relations, the relationship of individuals to social institutions, conformity, persuasion, aggression, prejudice, and sexuality. Meets the General Education Writing Requirement. May not be offered every year.

3. Introduction to Quantitative Sociological Studies
(4) STAFF

Not open for credit to students who have received credit for PSTAT 5AA-ZZ equivalent.

An introduction to the fundamentals of quantitative analysis to enable students to interpret findings of social research so they will be prepared for advanced coursework in sociology and able to intelligently participate as citizens in an increasingly statistically oriented society.

3H. Introduction to Quantitative Sociological Studies-Honors
(1) STAFF

Prerequisites: concurrent enrollment in Sociology 3 and consent of instructor.

Students must meet departmental honors criteria.

Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of 5 units in Sociology 3-3H.

4. Sociological Research Traditions
(4) STAFF

Recommended preparation: Sociology 3 or a PSTAT 5 series course.

Introduction to the basic language, logic, and techniques of major research traditions. Critical thinking in social science, and relation of theory to research in, for example, experiments, surveys, observational studies, historical and comparative approaches, and the use of available data.

4H. Sociological Research Traditions—Honors
(1) STAFF

Prerequisites: concurrent enrollment in Sociology 4 and consent of instructor.

Student must meet departmental or college honors criteria.

Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of 5 units in Sociology 4-4H.

91A. Field Placement in the Helping Professions: Relationships
(2) STAFF

Prerequisite: consent of instructor.

Enrollment by application only. No more than 4 units of 91A-Z may be applied towards overall unit credit.

Exploration of issues in relationships and sexual health. Students are trained as peer health educators which includes study of self-awareness, communication skills, and values clarification. Rape prevention is emphasized fall quarter; nutrition/eating disorders winter and spring quarters.

91B. Field Placement in the Helping Professions: Drugs and Stress
(2) STAFF

Enrollment by application only. No more than 4 units of 91A-Z may be applied towards overall unit credit.

Exploration of issues involved in making realistic health choices about alcohol, other drugs, and stress. Students are trained as peer health educators which includes studying self-awareness, communication skills and values clarification with emphasis on substance use and stress management.

91F. Field Placement in the Helping Professions: Community Health
(2) STAFF

Prerequisite: consent of instructor.

Enrollment by application only. No more than 4 units of 91A-Z may be applied towards overall unit credit.

Presentation of the principles and skills of community health. Through lecture and small group discussion, students study the relationship between social settings and health behaviors. Students taking this course are trained as lay health advisors.

91FD. Field Placement in the Helping Professions: Reader's Theater
(2) STAFF

Prerequisite: consent of instructor.

Enrollment by application only. No more than 4 units of 91A-Z may be applied towards overall unit credit.

Exploration of relationships between health, social setting, and health behaviors. Students study the principles and skills of community health using drama as a behavioral change tool. Students are trained to be peer health educators.

98. Readings in Sociology
(1-4) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit to a maximum of 8 units. No unit credit allowed toward the major.

Critical reviews and discussions of related topics in sociology under the guidance of a faculty member. Students wishing to enroll must prepare a short plan of study.

99. Introduction to Research in Sociology
(1-4) STAFF

Prerequisites: consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. May be repeated for credit to a maximum of 8 units. May be repeated for credit to a maximum of 8 units.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research or work in a research group. Students wishing to enroll must prepare a short plan of study.

UPPER DIVISION

102. Sociology, the University, and Society
(4) FLACKS

Prerequisite: consent of instructor.

Among the main topics are: society, the university, and the discipline. Subtopics include: social and personal responsibility, the university and social change, departmentalization of knowledge, decision making in the university, clientele of university, concept of academic freedom, student power, ethnic and other minorities, organization of profession of sociology, and professional vs. liberal education.

104A-B. Fundamentals of Data Analysis in Sociology
(4) W. BIELBY, WONG, FRIEDKIN

Prerequisites: PSTAT 5A-Z; concurrent enrollment in Sociology 104AL-BL.

Basic techniques for the analysis of sociological data using linear models. Emphasis is on sociological application; the course will cover the use of bivariate, multi-variate, and multiple-equation models in sociological research. Sociology 104A is a prerequisite to Sociology 104B.

104AL-BL. Laboratory in Data Analysis in Sociology
(2-2) W. BIELBY, WONG, FRIEDKIN

Prerequisite: concurrent enrollment in Sociology 104A-B.

Practical application of methods learned in Sociology 104A-B using computer programs to estimate and study properties of sociological applications of statistical properties. Preparation of reports of analyses of data.

107. Demographic Analysis
(4) STRAITS

Analysis of published demographic research with special reference to the accuracy of data from censuses and other sources; standardization and other methods for controlling differences in population composition; computation and use of rates and indexes, population estimates and projections.

108. Methods of Sociological Research
(4) STRAITS

Recommended preparation: an introductory research methods course.

Fundamentals of designing, conducting, and analyzing social surveys. While the main focus is on survey techniques, problems of design and interpretation in experimental and observational studies are touched upon in terms of contrasts and similarities.

108C. Methods of Cultural Analysis
(4) FALASCA-ZAMPONI

Recommended preparation: an introductory research methods course.

A survey of several methodological approaches that can be applied to the analysis of culture. Methods will be chosen from among the following: interviewing, content analysis, historical methods, structuralism, survey, ethnography, etc.

108CH. Comparative and Historical Methods in Sociology
(4) FORAN

Prerequisite: sociology majors only.

A survey of the methods of comparative-historical sociology, with case studies drawn from various periods and places, including the United States, Europe, and the Third World; relationships between theory, methods, evidence, research strategies, and logic will be stressed.

108F. Studying People at Firsthand—Observational Methods in Social Science Research
(4) DUNEIER, ZIMMERMAN

Recommended preparation: an introductory research methods course.

A vital aspect of modern sociology is the study of social activities in natural settings. This course explores the different methods a fieldworker can use to discover truths about society.

108ST. Special Topics in Methods
(4) STAFF

Recommended preparation: an introductory research methods course.

Course covers various topics in sociological methods. Topics, readings and field research will vary with instructors.

111. Computers in Society
(4) STAFF

An introduction to computers, their applications, and their impact on people and social institutions. Social problems created by computer use and remedies will be discussed. Information will be presented to urge constructive and creative thinking about technology, its uses, and its social impact.

112A-B. Practicum in Social Research
(4-4) STRAITS

Recommended preparation: an introductory research methods course.

This two-quarter sequence deals with study design, conceptualization, measurement, and data collection. Students will be working on a single research project conducted over two quarters.

113A-B-C. MOST Research Training in Sociology
(4-4-4) BIELBY, GORDON, DANIEL

Prerequisite: consent of instructor.

A year-long seminar introducing students to research specialties of the department. Students work with the instructor and with a faculty mentor to design a research project of their own.

118C. Sociology of Culture
(4) FALASCA-ZAMPONI, SUTTON, CRUZ

Prerequisite: upper-division standing.

A broad introduction to the sociological study of culture, organized around theoretical perspectives, definitional and analytical problems, the production of culture, and cultural effects on society.

118G. American Cultural Representations and Myths
(4) GORDON

Prerequisite: upper-division standing.

Exploration of selected range of cultural representations of America, focusing on the various dreams and myths that comprise our national identity. Attention to the impact of race, class and gender on American culture. Use of variety of mediums including film, television, ethnography, photography, and poetry.

118J. Jesus, Judaism and the Origins of Christianity
(4) FRIEDLAND

Prerequisite: upper-division standing.

Same course as Religious Studies 118J.

A sociohistorical perspective that analyzes the relationship between the Jesus movement and the Jewish society of his day. Examines the organization and meaning of sanctity and sovereignty, and positions the Jesus movement within the politics of these institutions.

118L. Sociology of Art/Literature
(4) GORDON

Prerequisite: upper-division standing.

Exploration of the relationship between art/literature and society. Focus on what art/literature teaches us about the social world and how it does so. Attention to questions of race, class, and gender. Use of variety of literary and visual mediums. Specific topics may vary.

118M. Music and Social Movements: The Culture of Protest
(4) FLACKS

Prerequisite: consent of instructor.

A historical and comparative exploration of the ways in which music is used to express and to mobilize collective protest; the ways in which social movements affect popular culture, and the role of the artist in social movements.

118R. Sociology of World Religion
(4) JUERGENSMEYER

Prerequisite: upper-division standing.

An introduction to religion as a social entity in contemporary societies. Covers the cultural regions of the Middle East, South Asia, Europe, Africa, East Asia, and the Americas. Takes into account class, caste, gender roles, and other forms of stratification.

122. Social Stratification
(4) WONG

Prerequisite: upper-division standing.

The nature of social classes and class relations, emphasizing contemporary studies of American society.

123. Population
(4) STRAITS

Prerequisite: upper-division standing.

Population composition and change; differential fertility and mortality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

126. Urban Society
(4) APPELBAUM, MOLOTCH, DUNEIER

Problems of the city (e.g., congestion, homelessness, violence), are examined in light of larger economic and social forces which structure urban life. Through use of slides depicting urban settings, causes and consequences of different ways urban settlements have been organized are considered.

126U. Sociology of the Urban Underclass
(4) WONG

Prerequisite: upper-division standing.

This course examines conservative, liberal, and radical perspectives on class, poverty, and race, and will allow a critical assessment of the social and political implications of the growing congruity between urban poverty and race.

128. Interethnic Relations
(4) DANIEL

Patterns of racial and ethnic relations, with particular emphasis upon minorities in the United States.

129. Economy and Ethnicity in American Society
(4) STAFF

Prerequisite: upper-division standing.

Factors determining the ethnic stratification of American society will be examined in light of theoretical and empirical research on discrimination, ethnic economy, segmented labor markets, achievement motivation. The seminar seeks to combine both cultural and structural factors in explaining the differential socioeconomic achievement of ethnic groups in contemporary American society.

130. Development and its Alternatives
(4) FORAN

Prerequisite: upper-division.

Survey of development and social change, emphasizing the Third World; modernization, dependency and other theories applied to cases drawn from Latin America, Asia, and Africa; examination of social structure, culture, social problems, and mechanisms of change.

130CC. Elements of Traditional Chinese Culture
(4) YANG

Prerequisite: not open to freshmen.

Same course as Anthropology 138A.

An exploration of cultural, historical, and political elements in ancient and late imperial China which are relevant in understanding modern society in socialist China and Taiwan today. Emphasis given to the cultural tradition of the state.

130CS. Socialist Chinese Society
(4) YANG

Prerequisite: not open to freshmen.

Same course as Anthropology 138B.

An analysis of social, cultural, economic, and political patterns in the People's Republic of China, emphasizing the diverse changes instituted after the Revolution, as well as the new directions the society has taken since the economic reforms of the 1980's.

130LA. Development and Social Change in Latin America
(4) FORAN

Prerequisite: upper-division standing.

Examines significant instances of economic, political, cultural, and social change in contemporary Latin America. Employs various perspectives to illuminate such phenomena as changing social structures, industrialization, social movements, the state, multinationals, the military, and international pressures.

130ME. Development and Social Change in the Middle East
(4) FORAN

Prerequisite: upper-division standing.

Surveys major instances of economic, political, cultural, and social change in the Middle East, historically and in the contemporary period. Assesses changing social structures, social movements, the role of Islam, and topics in Iran, Egypt, and Turkey, among others.

130SA. Development and Social Change in South and Central Asia
(4) JUERGENSMEYER

Prerequisite: upper-division standing.

Same course as Global Studies 140.

An exploration of post-colonial social changes in India, Pakistan, Sri Lanka, and other South and Central Asia societies, with emphases on the rise of ethnic nationalism, the impact of international economic and communication systems, and indigenous forms of development.

131. Political Sociology
(4) FLACKS

Prerequisite: upper-division standing.

Social and cultural bases of the political process; the study of power and authority as reflecting the interplay of interests and values; analysis of continuities and discontinuities in the democratic political system.

131H. Politics and Religion in the City: The Case of Jerusalem
(4) FRIEDLAND

Same course as Religious Studies 131H.

This course examines relationships between religion and politics in Jerusalem. As a sacred center for Judaism, Christianity, and Islam, and national center for Israelis and Palestinians, Jerusalem provides the unique opportunity to examine co-existing groups holding opposing world views.

133. Sociology of Mass Communications
(4) MOLOTCH, CRUZ

Organization and processes of mass communications in American society and developing nations; effects of the mass media on social consensus, conflict, and innovation.

134. Social Movements
(4) FLACKS

Prerequisite: upper-division standing.

Causes, dynamics and consequences of protest. American social movements, particularly labor, civil rights, student and women's movements, are studied as cases in movement development. Documentary and fiction films help illustrate analytic themes and historical moments.

134R. The Sociology of Revolutions
(4) FORAN

Prerequisite: upper-division standing.

Theories of social revolution will be presented; the causes, types, nature, processes, and outcomes of revolutions will be explored and assessed, with case studies drawn from among the French, Russian, Chinese, Mexican, Cuban, Iranian, and Nicaraguan revolutions, among others.

134T. Social Analysis of Terrorism
(4) JUERGENSMEYER

Prerequisites: upper-division standing.

Same course as Global Studies 134.

A study of terrorist movements and actions, especially those involving religious militants in the Middle East, South Asia, Europe, and the Americas. An exploration of their social causes and effects, and the relationship between religion and violence.

136A. The Analysis of Conversational Interaction
(4) ZIMMERMAN, LERNER

Prerequisite: upper-division standing.

Not open to students who have completed Sociology 136.

The analysis of naturally occurring conversations with an emphasis on understanding conversation as a form of social interaction. Focuses on systems that organize talk-in-interaction (turn taking, action sequencing, and repair of conversational troubles) and methods for analyzing single conversations.

136B. Methods of Conversation Analytic Research
(4) ZIMMERMAN, LERNER

Prerequisite: Sociology 136.

Not open for credit to students who have completed Sociology 136Q.

Individual and group projects in the analysis of conversational interaction stressing the understanding of this approach through actual research.

136I. The Analysis of Interaction in Institutional Setting
(4) ZIMMERMAN

Prerequisite: upper-division standing.

The course examines how interaction in institutional settings differs from everyday interaction, and how these differences contribute to the constitution of formal settings of social action.

136V. Video Study of Social Interaction
(4) LERNER, ZIMMERMAN

Prerequisite: upper-division standing.

Examination of the visible aspects of social interaction: the organization of gesture, gaze, and body movement in the production of social actions through a survey of relevant research and through direct inspection of videotapes of ordinary social occasions.

137E. Sociology of the Black Experience
(4) STAFF

Prerequisite: upper-division standing.

Same course as Black Studies 137E.

This course will give a sociological overview of the experiences of Blacks in the United States from slavery to the present. Sociological analysis of the changing historical significance of Black poverty, the Black family, and the Black worker in the United States will be presented.

138. The Sociology of Conflict
(4) STAFF

Prerequisite: upper-division standing.

Conflict as a basic and continuous social process; relationships to social change and social organization; modes of resolving differences.

138G. Global Conflict
(4) JUERGENSMEYER

Prerequisite: upper-division standing.

Same course as Global Studies 124. Not open for credit to students who have completed Global Peace and Security 138 or Interdisciplinary 197C.

Exploration of some of the major points of tension in global society since the end of the Cold War, with emphasis on the rise of religious nationalism and ethnic strife in the Middle East, South and Central Asia, and Russia.

138U. Sociology of conflict and Consensus Among Nations
(4) STAFF

Prerequisite: upper-division standing.

Explores conflict and cooperation among nations. Conflict resolution and agencies and effort seeking to increase international cooperation are included. The role of non-governmental organizations and of institutionalized democratic politics will be discussed.

139A. Black and White Relations: Towards Pluralism or Integration?
(4) DANIEL

Not open for credit to students who have completed Black Studies 139A.

A comparative-historical examination of interethnic relations between European Americans and African Americans from the colonial period to the present in terms of pluralistic and integrationist dynamics.

139B. African Americans and "Other" European Americans: A Study of Conflict and Cooperation
(4) DANIEL

Not open for credit to students who have completed Black Studies 139B.

A comparative-historical examination of interethnic relations between African Americans and various immigrant European American ethnic groups (e.g., Irish Americans, German Americans, Italian Americans, and Jewish Americans) in the process of "Americanization."

139C. Betwixt and Between: Multiracial Identity in the United States
(4) DANIEL

Prerequisite: upper-division standing.

An examination of the factors that have influenced the social location of racially mixed individuals of African and European descent in the United States, in order to provide a context for understanding the complexities surrounding the newly emerging multiracial consciousness.

139D. African Americans and "Other" Americans of Color: Allies or Antagonists?
(4) DANIEL

Prerequisite: upper-division standing.

A comparative-historical examination of interethnic relations between African Americans and various other ethnic groups of color (e.g., Native Americans, Asian Americans, Latina/o Americans, etc.). Special attention to factors that have given rise to areas of conflict and cooperation.

140. Aging in American Society
(4) D. BIELBY

Prerequisite: upper-division standing.

Recommended preparation: a socialization or developmental psychology course or personal experience working with the elderly.

This course will survey and analyze aspects of growing old in American society. Attention is focused on the meaning of aging to the individual as topics including physical and mental health, retirement, leisure, sexuality, death, and dying are discussed.

141S. Interpersonal Processes
(4) SCHULMAN

Prerequisite: upper-division standing.

Through small group activity, students consider processes of person perception, impression management, interpersonal communication, formation of interpersonal relationships, and formation of affect (liking/disliking). Students analyze videotapes, participate in group analysis, and read empirical and theoretical literature in these areas.

142. Socialization, Self-Actualization, and Creativity
(4) J.D. BALDWIN

The influence of people's social environment on their developing behavior. Attention devoted to exploration, play, creativity, self-actualization, showing how certain social environments are or are not conducive to full human development.

143. Small Groups
(4) SCHULMAN

Prerequisite: upper-division standing.

The structure and dynamics of small groups, including the analysis of roles, interpersonal relations, and group characteristics; inter-group relations; field and laboratory research on small groups.

144. The Chicano Community
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Chicano Studies 144.

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community; social culture, and social change; acculturation and generational patterns; community leadership and change.

144S. Sexuality, Race, Gender, and Class
(4) SCHNEIDER

Prerequisite: upper-division standing.

Examines interplay of sexuality, race, gender, nation, and class with focus on social processes and practices of lesbians, gays, and bisexuals of color. Raises critical intellectual issues about racialized and gendered social practices involving culture, politics, ideologies, and power relations.

146. Special Topics in Sociology
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 16 units, but only 8 units may be applied toward the major.

Lectures in special areas of interest in contemporary sociology. Specific course titles to be announced by the department each quarter.

147. Current Issues in Social Psychology
(4) STAFF

Prerequisite: upper-division standing.

Examination of recent developments in research and theory within selected fields of social psychology.

148. Social Networks
(4) STRAITS

Prerequisite: upper-division standing.

Recommended preparation: Sociology 1, 2, 3, and 4, or their equivalents.

Social structure as derived from patterns of micro-relations (networks of people) and macro-relations (networks of organizations, interest groups, nations, or other collectives); consequences of network relationships for social behavior and the distribution of resources, information, power, beliefs, and social support.

148MA. Social Network Analysis
(4) FRIEDKIN

Prerequisite: upper-division standing.

Introduction to concepts, methods, and applications of social network analysis.

148MB. Social Network Analysis
(4) FRIEDKIN

Prerequisite: Sociology 148MA.

Continuation of Sociology 148MA.

148P. Personal Networks
(4) STRAITS

Prerequisite: upper-division standing.

This course examines the manner in which individuals' attitudes and behaviors are affected by their personal ties to others. Topics include gender and generational differences in network composition; network processes during crises and other significant life events; and network maintenance.

151. Gender in Film and Television
(4) W. BIELBY, D. BIELBY

Prerequisite: upper-division standing.

Examination of how structural, cultural, and historical factors shape images of gender in film and television.

152A. Sociology of Human Sexuality
(4) J.D. BALDWIN, J.I. BALDWIN

The course covers all the main aspects of human sexuality—anatomy, sexual response, pregnancy, sexual diseases including HIV, birth control, abortion, learning to be sexual, sexual orientation, gender differences, sex therapy and enrichment, love, and related sociological issues.

152B. Topics in Human Sexuality
(4) J.D. BALDWIN, J.I. BALDWIN

Prerequisites: Sociology 152A and consent of instructor.

A seminar for advanced research on and discussion of sociology of human sexuality. Each student facilitates one class discussion on one of the main topics on sexuality..

152C. Advanced Study in the Sociology of Human Sexuality
(4) J.D. BALDWIN, J.I. BALDWIN

Prerequisites: Sociology 152A-B and consent of instructor.

This course covers specific details about human sexuality. Course content will be determined by students and instructors.

153. Women and Work
(4) FENSTERMAKER, SEGURA

Prerequisite: upper-division standing.

Same course as Women's Studies 153.

The course will begin with readings and discussion of the sociological features of work in society. The role of women in the labor market will be explored, as well as their lives as unpaid workers in their own homes. Finally, more global issues of sexual inequality and social change will be discussed.

154A. Sociology of the Family
(4) STAFF

Prerequisite: upper-division standing.

Same course as Women's Studies 154A.

A lecture course on family and household organization, past and present. Attention to contemporary issues in the American family focusing on gender, class, and cultural variation.

154F. The Chicano Family
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Chicano Studies 154F.

This course provides an overview of historical and contemporary research on Chicano families in the United States. Changing viewpoints on the character of Chicano families and their implications with respect to policy issues are examined.

155A. Women in American Society
(4) FENSTERMAKER

Prerequisite: upper-division standing.

Same course as Women's Studies 155A.

The roles and life styles of women in various American subcultures and the ideologies developing around them.

155AG. Anthropology of Gender
(4) YANG

Prerequisite: not open to freshmen.

Same course as Anthropology 125.

The cross-cultural study of gender from a feminist perspective. Topics may include gender and nature, gender and the division of labor, gender and kinship, gender and subjectivity, gender and sexuality, gender and the state, gender and knowledge/discourse.

155B. Sociological Perspectives on Women
(4) FENSTERMAKER, SCHNEIDER

Same course as Women's Studies 155B. May be repeated once providing topics are different.

Recommended preparation: Sociology 155A.

Advanced study in the sociology of women. Course format (seminar or lecture) and topics vary from year to year. Topics may include: the analysis of the status of women in the labor force, women's class position, theoretical and practical aspects of patriarchy.

155M. Contemporary U.S. Women's Movements
(4) SCHNEIDER

Examination of the development and transformation of the U.S. contemporary women's movement. Consideration is given to ideological and organizational differences, internal politics, and the impact of the movement on individuals, policies, and institutions.

155R. Chicana Research Issues
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Chicano Studies 155R.

This course is designed to enable students to develop and implement a research project that explores in depth one or more facets of the Chicana experience. Students will select and gather information in one area of interest: family, health, education, or employment.

155T. Girls Culture
(4) TWINE

Prerequisite: upper-division standing.

Introduction to the interdisciplinary feminist literature on girls culture. Examination of how girls from a range of racial/ethnic, class, religious, and national backgrounds respond to social inequalities and cultural prescriptions of femininity. Topics may include sexuality, popular culture, economic dependence and activism.

155W. La Chicana: Mexican Women in the U.S.
(4) SEGURA

Prerequisite: upper-division standing.

Same course as Chicano Studies 155W.

Examines existing research on native-born and immigrant Mexican women in the United States with emphasis on family, education, employment, and politics. Analysis of the Chicana experience organized by considering how interplay between class, race, and gender affects access to opportunity and equality.

156A-B. Women, Culture, and Development
(4-4) BHAVNANI

Prerequisite: upper-division standing.

Same course as Global Studies 180A-B and Anthropology 102A-B.

Critical examination of the interrelationship between women, culture and development. Topics include colonialism, violence, globalization and the state, health and reproduction, religion and nationalism, sustainable development, biotechnology, representation, and resistance movements.

156LA. Engendering Latin America
(4) TWINE

Prerequisite: upper-division standing.

Analysis of women's social movements and the transformation of patriarchy in Latin America. Emphasis on feminist political theory and the relationship between women's consciousness and nonrevolutionary social change. Topics may include postauthoritarian feminism, masculinity, political economy, family and migration.

157. Radicalism in American Life
(4) FLACKS

An analysis of the social sources and impacts of radical ideologies and organizations on American life and politics in the twentieth century.

159LG. Sociology of Lesbian and Gay Communities
(4) SCHNEIDER

Prerequisite: upper-division standing.

Same course as Women's Studies 159LG.

Origins and transformation of lesbian and gay communities and social movements, with special attention to ideological development, major social problems, cultural production, race, ethnic and gender differences, organizational formation and political conflict.

1595. Sociology and Sexual Politics
(4) STAFF

Prerequisite: upper-division standing.

Recent approaches to the study of sexuality through the work of gay and lesbian scholars, social historians, feminists, and discourse theorists. Emphasis on recent changes in sexuality, sexual suffering, and sexual politics. Topics vary with instructor.

160. Sociology of Work
(4) W. BIELBY

Prerequisite: upper-division standing.

Management and worker organizations, formal and informal. Accommodation among these organizations, and interaction between them and the community.

164. Sociology of Education
(4) FRIEDKIN

Changing character of education in complex societies; its relation to political, economic, and technological institutions; and its effect on individual and community behavior and development.

166. Economy and Society
(4) FRIEDLAND, APPELBAUM

Prerequisite: upper-division standing.

This course will consider the relationship between economy and society. The course will analyze non-market determinants of market phenomena, as well as the ways in which markets impinge upon non-market institutions, whether state, family, or community. The topics included in the course will vary.

166W. The Contemporary World System
(4) APPELBAUM

Prerequisite: upper-division standing.

Same course as Global Studies 122.

Seminar addressing various theoretical perspectives and empirical issues and aspects of the world system, with emphasis on political, economic, cultural, and social processes and relations.

167. The Structure and Dynamics of Organizations
(4) W. BIELBY, FRIEDLAND, SUTTON

Prerequisite: upper-division standing.

Institutional analysis of administrative structures and voluntary associations: informal organization, ideology, bureaucracy, decision making, and morale.

168E. Ethical Capitalism
(4) J.D. BALDWIN

Is capitalism evolving to be more or less ethical? How are current conditions in the global system affecting the evolution of capitalism in its various manifestations? These and many more related questions will be explored, using current data from many nations.

168R. Research on Ethics and Capitalism
(4) J.D. BALDWIN

Prerequisites: Sociology 168E and consent of instructor.

This class allows students to conduct personalized research on capitalism and ethical issues in real-life situations.

170. Sociology of Deviant Behavior
(4) SUTTON

Prerequisite: upper-division standing.

Introduction to the sociological study of conformity and deviance, with emphasis on processes of social control.

171. Sociology of Mental Illness
(4) STAFF

Prerequisite: upper-division standing.

Sociological analysis of mental disorder: the cultural context of health and illness, social processes in the definition, recognition, and treatment of mental illness.

172. Sociology of Crime and Delinquency
(4) STAFF

Prerequisite: upper-division standing.

Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

173. Sociology of Law
(4) SUTTON

Prerequisite: upper-division standing.

Study of the social and cultural factors underlying the development, maintenance, and change of legal structures and processes, and analysis of theories of jurisprudence.

174. Criminal Justice and the Community
(4) STAFF

Prerequisite: upper-division standing.

Sociological analysis of law enforcement systems and court systems; police discretion, differential implementation of the criminal law; negotiation in criminal justice decisions.

175. Sociology of Punishments and Corrections
(4) STAFF

Prerequisite: upper-division standing.

Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the systems of behavior modification used by probation, prison, and parole workers.

176A. Sociology of AIDS
(4) SCHNEIDER

Prerequisite: upper-division standing.

Sociological analysis of AIDS: the social history of disease; social construction of AIDS as a social problem; stigma, illnesses, and sexuality; impact of AIDS on selected groups and communities; legal, medical, and political institutions' response to AIDS.

176D. Sociology of Drug Use
(4) STAFF

Prerequisite: upper-division standing.

Deals with such topics as the demographic patterns of drug usage, socialization into and out of drug subcultures, criminalization and decriminalization of various drugs, and drugs as they pertain to women, youth, and minorities. Cross-cultural approaches to drug use and treatment modes. (SS)

177. Social Problems
(4) STAFF

Prerequisite: upper-division standing.

We will discuss sociological studies and theoretical propositions pertinent to the analysis of such problems as substance abuse, crime, poverty and homelessness, illiteracy, abortion, sexism, bigotry, pollution, population, and war. Politics and strategies proposed for their amelioration will be discussed.

185A. Development of Sociological Thought
(4) APPELBAUM, CRUZ, FRIEDLAND

Prerequisite: upper-division standing.

The outstanding European and American figures and idea systems in the development of sociological thought are discussed.

185B. Social Ethics
(4) JUERGENSMEYER

Prerequisite: upper-division standing.

An exploration of the moral dilemmas of modern organizational society, theories of social ethics that respond to them, and notions of ideal moral communities that have been developed as alternatives.

185C. Cultural Theory
(4) FRIEDLAND

Prerequisite: upper-division standing.

An introduction to functionalist, semiotic, dramaturgical, Weberian, Durkheimian, Marxian and post-structuralist approaches to cultural analysis.

185D. Theories of Race and Ethnic Relations: United States Sociological Perspectives
(4) DANIEL

Prerequisite: upper-division standing.

A comparative-historical survey of classical and contemporary United States sociological theories of race and ethnic relations.

185E. Introduction to Ethnomethodology
(4) ZIMMERMAN

Prerequisite: upper-division standing.

Fundamental processes of social interaction and social organization. Accountability of action and the fundamental mechanisms of interaction; co-implication of institutional context and individual agency in interaction; reproduction of individual identities and social structure as trans-situational realities.

185F. French Social Theory
(4) FALASCA-ZAMPONI, FORAN

Prerequisite: upper-division standing.

An examination of major developments in French social theory both from the historical and the thematic point of view. Authors studied may include: Comte, Durkheim, Mauss, Althusser, Foucault, Bourdieu, Sartre, Levi-Strauss, and Baudrillard.

185G. Theories of Gender and Inequality
(4) GORDON, BHAVNANI, TWINE

Prerequisite: upper-division standing.

Varying theoretical perspectives on causes of gender inequality, maintenance and reproduction of gender systems, social consequences of gender stratification, and dynamics of change in systems of inequality.

185J. Power in Social Institutions
(4) MOHR

Prerequisite: upper-division standing.

Exploration of both classical and contemporary theories about social power. Application of these ideas to two or three special topics each quarter such as gender, organizations, work, and the state. Emphasis on explaining historical foundations of institutional arrangements.

185K. Feminist Perspectives in the Human Sciences
(4) BHAVNANI

Prerequisite: upper-division standing.

Introduction to key arguments about feminisms and the social sciences. It will examine issues including production, reproduction, and sexuality and will consider a range of feminist perspectives while being mindful of difference, race, and ethnicity.

185P. G.H. Mead's Theory of Pragmatism
(4) J.D. BALDWIN

George Herbert Mead's theory of pragmatism provides a major foundation for sociological theory. It is also a very useful theory for contemporary social life. It integrates personal and interpersonal issues with larger macro-social concerns to create a unified theory.

185S. Special Topics in Social Theory
(4) STAFF

Prerequisite: upper-division standing.

Exploration of various theorists, schools of thought, particular theories, and special problems and issues in social theory. Topics and readings will vary.

190A. Group Studies in Organizational Settings
(1-4) STAFF

Prerequisite: consent of instructor.

Students must have an overall grade-point average of 3.0; student proposal required.

Systematic exploration of the problems of institutional and community development, the dilemmas of social service institutions and helping occupations, the potentialities and constraints on the creation of social and cultural alternatives.

190CH. Capitol Hill Internship
(2-12) W. BIELBY, FLACKS, FRIEDLAND

Prerequisites: upper-division social science majors; consent of instructor.

Political science majors may not enroll in Sociology 190CH. A 3.0 grade-point average is required. May be repeated to a maximum of 12 units, but only 8 units combined may be applied toward credit in the major.

For students involved in government related internships and living off campus for one or more quarters. Internships must include original research projects and other active learning experiences. Student proposal required.

191CA. Instructional Laboratory in Sociology
(1-4) STAFF

Prerequisites: upper-division standing; consent of instructor and department.

Students must have a 3.0 overall grade-point average and a 4.0 grade-point average in relevant course(s); may be repeated for credit to a maximum of 12 units but only 4 units of all 191AA-ZZ may be applied toward the major.

Designed for outstanding students who intern as course assistants under the supervision of the assigned faculty member.

191EA. Field Placement in the Helping Professions: Relationships
(1) STAFF

Prerequisites: completion of one course from the Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count toward sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EB. Field Placement in the Helping Professions: Alcohol/Drugs
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EC. Field Placement in the Helping Professions: Nutrition/Eating Disorders
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EE. Field Placement in the Helping Professions: R.P.E.P.
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers. (R.P.E.P. = Rape Prevention and Education Program)

191EF. Field Placement in the Helping Professions: Sexual Health
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EG. Field Placement in the Helping Professions: Health
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EH. Field Placement in the Helping Professions: Eating Disorders
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree require-

ments, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EI. Field Placement in the Helping Professions: Leadership
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EK. Field Placement in the Helping Professions: Readers Theatre
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EL. Field Placement in the Helping Professions: Community Health
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

191EZ. Field Placement in the Helping Professions: Peer Health Education
(1) STAFF

Prerequisites: completion of one course from Sociology 91A-Z series; consent of instructor and department chair.

A maximum of 6 units of Sociology 191A-Z combined may be applied toward degree requirements, and 4 of which will count towards the sociology major.

This course allows students who have completed one course from the Sociology 91A-Z series to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers.

192. Projects in Computer Science
(4) STAFF

Prerequisite: consent of instructor.

May be repeated for credit with consent of instructor, but with the limit of 12 units total for the three courses Mathematics 192, ECE 192, and Sociology 192 combined. Only 4 units of Sociology 192 may be applied to the upper-division sociology major.

Projects in computer science for advanced undergraduate students.

193. Senior Seminar
(4) STAFF

Prerequisite: consent of instructor.

Open only to sociology majors who have completed 20 or more units of upper-division coursework in the major. May be repeated once for credit if topic and instructor are different.

A seminar intended to represent a culminating experience for majors. The focus will be on a topic or theme that permits intensive analysis of methods and problems of social inquiry. Topics will vary with the instructor.

194. Group Studies for Advanced Students
(2-5) STAFF

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 12 units..

Intensive study and research.

195H. Sociology Honors Colloquium
(2) STAFF

Prerequisite: Must meet departmental honors criteria.

May be repeated for credit to a maximum of 6 units.

In conjunction with the sociology colloquium series, this course will address issues and topics presented by the speakers. Participating students will be expected to read assigned materials and participate in discussions.

196H-HR-HT. Honors Research Practicum in Sociology
(4-4-4) STAFF

Prerequisites: open to upper-division sociology majors only; consent of instructor.

Students must have a minimum grade-point average of 3.5 in sociology and overall. A three-quarter in-progress sequence course leading to the preparation and presentation of the honors thesis. Grades issued upon completion of Sociology 196HT.

H. Students will develop research topics and appropriate methodologies. General issues of sociological research will be raised and discussed, including the relationship between theory and method.

HR. Students will concentrate on data collection and analysis.

HT. Students will complete their research, write their theses, and present their results orally to the seminar.

197H. Honors Sociology
(4) STAFF

Prerequisites: Sociology 1, 2, and 3; a prior upper-division sociology course.

Students must meet sociology honors criteria. May be repeated to a maximum of 8 units.

An undergraduate seminar for honors students. Topics will vary by instructor.

198. Readings in Sociology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in sociology.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 12 units of Sociology 198/199 courses combined to the sociology major.

Readings in sociology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

198H. Honors Reading Projects in Sociology
(1-5) STAFF

Prerequisites: Sociology 1; upper-division standing; completion of two upper-division courses in sociology

Students must have a minimum 3.5 grade-point average and meet departmental honors criteria. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a total of 12 units of Sociology 198, 198H, and 199 combined to the sociology major.

Designed for honors reading projects under the guidance of a faculty member. Students wishing to enroll should prepare a short plan of study.

199. Independent Studies in Sociology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in sociology

Students must have a minimum 3.0 grade-point average for the preceding 3 quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 12 units of Sociology 198/199 courses combined to the sociology major.

Independent studies in sociology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

199RA. Independent Research Assistance in Sociology
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in sociology; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 12 units of Sociology 198/198H/199/199RA courses combined to the sociology major.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

203R. Foundations of Research Design
(4) SUTTON

Recommended preparation: Sociology 207AB or equivalent.

Explores the logical foundations of the major research traditions in sociology.

204A-B-C. Topics in Advanced Data Analysis
(4-4-4) W. BIELBY, WONG

Prerequisites: Sociology 103 and 104.

Sociology 204C may be repeated twice providing the topics are different.

This seminar will deal with topics of current interest in the area of data analysis and will give participants "hands-on" experience in using the new techniques with real data. Participants will analyze data of their choosing and will write up the results in journal article form. Technical assistance and some data archives will be provided by the sociology computing facility.

205A-B. Data Analysis in Sociology
(4) W. BIELBY, WONG, FRIEDKIN

Prerequisite: Political Science 205 or PSTAT 5A-Z.

Sociology 205A is a prerequisite to Sociology 205B.

Basic techniques for the analysis of sociological data using linear models. Emphasis is on sociological application; the course will cover the use of bivariate, multi-variate, and multiple-equation models in sociological research.

205AL-BL. Laboratory for Data Analysis in Sociology
(2-2) W. BIELBY, WONG, FRIEDKIN

Prerequisites: concurrent enrollment in Sociology 205A-B.

Laboratory in quantitative data analysis using computer programs to estimate and study properties of sociological applications of statistical properties.

206. Intermediate Methods of Sociological Research
(4) STRAITS

Prerequisite: Sociology 3.

Review of fundamentals of designing, conducting, and analyzing social surveys. Problems of design and interpretation in experimental and observational studies will be discussed.

207A-B-C. Sociological Theory
(4-4-4) APPELBAUM, CRUZ, GORDON

Material covered equivalent to that offered in Sociology 200A-B.

Fundamental issues in contemporary social theory from their emergence in the Enlightenment, through the writings of Marx, Durkheim, and Weber, to present day controversies.

210. Seminar in Ethnomethodology
(4) STAFF

Prerequisite: consent of instructor.

Fundamental processes of social interaction and social organization. Accountability of action and mechanisms of institutionalization.

211A-B. Field Research in Sociology
(4-4-4) STAFF

The organization and execution of research in natural settings; analysis of field data and documentary evidence; problems of comparative history and analytic induction.

212A-B. Seminar in Comparative-Historical Sociology
(4-4) FORAN

Sociology 212B may be repeated for credit.

A. Theoretical and methodological bases of comparative-historical sociology. Use of theories and concepts, logic of comparison and contrast, types of evidence, and other issues raised by classic works and methodological writings.

B. Students pursue research projects applying historical and/or comparative methods.

212F. Feminist Research Methodologies
(4) FENSTERMAKER, BHAVNANI

Fundamental issues in the philosophy, process, and tools of feminist research inquiries.

212P. Gender Research Practicum
(4) FENSTERMAKER, BHAVNANI

A research practicum in which students apply the fundamentals of feminist research methodologies to current projects.

212R. Introduction to the Analysis of Recorded Interaction
(4) LERNER

Prerequisite: consent of instructor.

Methods for analyzing talk in interaction in a computerized multimedia environment. Methods for producing an action analysis, locating recurrent features, building a data collection, and developing a data collection into a formal research paper.

213. The Practice of Critical Ethnography
(4) BHAVNANI

This course will introduce students to theories and practices of critical ethnography. The aim of the course is to show how critical ethnography can be practiced. Hence, the focus will be on conducting empirical ethnographic research.

214A-B. Introduction to Race, Ethnicity, Nation
(4-4) CRUZ, GORDON

Recommended preparation: Sociology 214A for Sociology 214B.

Focus on the influential and paradigmatic theoretical and conceptual scholarship in the field. Emphasis on comparative framework, cultural approaches, intersection of race, class, and gender, and on interdisciplinary scholarship.

21SD. United States Sociology of Race, Ethnicity, and Nation
(4) DANIEL

Prerequisite: Sociology 207A-B-C.

Historical contextualization of classical and contemporary United States sociology of race, ethnicity, and nation; comparative analysis of the order and power-conflict perspectives, particularly in terms of their ability to chart race and ethnic dynamics since the 1960's.

216D. Topics in Comparative - Historical Race, Ethnicity, and Nation
(4) DANIEL

Recommended preparation: Sociology 214A-B, or 215A. Topics vary. May be repeated for credit provided the topic is different.

Comparative-historical sociological analyses of varying patterns of race and ethnic relations in the United States and in the larger global arena.

218C. Sociology of Culture
(4) SUTTON

Seminar on the sociological study of culture, examining theoretical perspectives, definitional and analytical problems, production of culture, and cultural effects.

218CP. Topics on Cultural Sociology
(4) FALASCA-ZAMPONI

May be repeated for credit

Selected topics in the sociological analysis of the relationship between culture and politics.

218P. Seminar on Popular Culture
(4) D. BIELBY, W. BIELBY

This seminar focuses on theories, research, and debates regarding the sociological analysis of popular culture.

218T. Third World Cultural Studies
(4) FORAN

Prerequisite: consent of instructor.

This course links together Third World and cultural studies by examining political culture, religion, literature, film, identities, and social movements, trends in area studies scholarship, race/class/gender, and other topics as represented in writings about the Third World.

219. Introduction to Cultural Studies
(4) BHAVNANI

This course will introduce students to the rationales for developing work in cultural studies. It will draw upon writings by Stuart Hall, Raymond Williams, R. Hoggart, and E.P. Thompson, and will then introduce students to recent developments in this area.

222. Social Stratification
(4) STAFF

Advanced study of the nature of social classes and class relations, emphasizing contemporary studies of American society.

223. Measuring Meaning Structures
(4) MOHR

Introduces computer-based methods for analyzing the type of qualitative textual data which might be extracted from recorded interviews, newspaper articles, CD-ROMS, .web sites, or other forms of social and cultural discourse.

224. Seminar in Collective Behavior and Social Movement
(4) STAFF

Advanced study of theory and research on protest, collective mobilization, collective behavior, grass roots activism, and related topics.

22S. Sociology of Colonization
(4) OYEWUMI

A look at theories and readings of colonization including Lenin, Fanon, and Memmi; drawing from the African, South Asian, and Latin American experiences; interrogate colonization as the precursor of globalization.

231. Seminar in Political Sociology
(4) FLACKS, FRIEDLAND

Study of the social and cultural bases of the political process.

236. The Analysis of Conversational Interaction
(4) LERNER, ZIMMERMAN

Prerequisite: consent of instructor

This seminar focuses on the structure of naturally occuring conversational interaction with an emphasis on problem formulation and methods of analysis.

236I. The Analysis of Interaction in Institutional Settings
(4) ZIMMERMAN

Prerequisite: Sociology 236.

This seminar focuses on how the dynamics of interactional processes contribute to the constitution of formal settings of social action.

236V. Video Study of Social Interaction
(4) LERNER

Prerequisite: Sociology 236.

This course examines visible aspects of social interaction. It explores the organization of gesture, gaze, and body movement in the production of interaction through a survey of published research and direct inspection of recordings of ordinary social occasions.

239. Sociology of Law
(4) SUTTON

Selected topics in the sociological analysis of legal structures and processes, and of theories of jurisprudence.

240. G.H. Mead's Pragmatism
(4) BALDWIN

Analysis of George Herbert Mead's theories of pragmatism and their application to micro and macro sociological issues, showing how Mead created a unified sociological theory.

242. Seminar in Language and Social Interaction
(4) ZIMMERMAN, LERNER

Prerequisite: Sociology 136.

The seminar will explore selected topics in the analysis of naturally occurring conversation with the emphasis on conversational exchange as a form of social interaction.

243. Practicum in Social Psychology
(4) STAFF

Advanced development of topics in social psychology. Consideration of theory and concepts as well as the design and execution of empirical research will be included.

244. Seminar in Socialization
(4) J.D. BALDWIN

Selected topics in social development and social learning theory will be discussed.

24SA-B-C. Seminar on Gender
(4) STAFF

Current research, theories and concepts of gender will be considered. Topics vary from quarter to quarter and by instructor.

246. Seminar on the Life Course
(4) D. BIELBY

Examines theoretical and methodological approaches to the study of the life course. The dynamic relation between changing social structures, institutions, and life patterns is emphasized.

248A-B-C. Seminar in Social Networks
(4-4-4) FRIEDKIN, MOHR, STRAITS

Presentation and discussion of work-in-progress and recent publications emphasizing network relationships among social entities (people, organizations, nations, or other collectives).

248MA-MB. Social Network Analysis
(4-4) FRIEDKIN

Prerequisite: consent of instructor.

Introduction to concepts, methods, and applications of social network analysis.

254. The Family
(4) SCHNEIDER, SEGURA, TWINE

Selected topics in sociological analysis of family and household arrangements. Particular attention will be paid to the implications of change for systems of gender and race inequality.

2SS. Seminar in Feminist Studies
(4) FENSTERMAKER, SCHNEIDER, SEGURA, TWINE

This course will analyze the social, cultural, and economic roots of women's oppression. Particular attention will be paid to the variety of forms that inequality takes, and the diversity of women's experiences which results.

2S5R. Seminar on Gender, Race, and Class
(4) STAFF

An examination of the intersection of race, class, and gender in empirical and theoretical sociological work.

256A-B. Seminar in Feminist Theory
(4-4) FENSTERMAKER, GORDON, SCHNEIDER, TWINE

A two-quarter course describing the development and issues in contemporary feminist thinking.

256S. Seminar on Sexualities
(4) SCHNEIDER

Research and theory on sexual meanings, identities, behavior, and communities.

257A-B-C. Feminist Studies Proseminar
(4-4-4) STAFF

Prerequisite: consent of instructor.

An advanced seminar focusing on research development in the broad area of feminist studies.

261A-B-C. Comparative Institutions
(4-4-4) W. BIELBY, MOHR, SUTTON

An advanced seminar focusing on research development in broad area of comparative institutions within related political, social, economic, and cultural frameworks.

263. Language and the Body
(4) LERNER, THOMPSON

Prerequisite: graduate standing.

Same course as Sociology 273A and Linguistics 273A. For students not planning to enroll in Linguistics/Sociology 273B.

Brings together the methods and findings of functional linguistics and those of conversational analysis in a dialogue centering on the visible behavior of the body in the organization of talk-in-interaction, especially gesture, gaze, and body movement.

264. Education and Society
(4) STAFF

A seminar examining the major theoretical perspectives and a wide variety of empirical studies on the relationship between education and society.

265. Development and its Alternatives
(4) FORAN, BHAVNANI, APPELBAUM

The seminar will explore a range of theories, issues, and case studies in the sociology of development and social change, primarily in the Third World. Topics and cases covered will vary according to students' and instructor's interests.

265GS. Global Political Economy
(4) APPELBAUM

An advanced graduate seminar covering recent theory and research about global production systems, including developments in world-systems theory, flexible production, post-Fordism, and global commodity chains.

265LA. Development and Social Change in Latin America
(4) FORAN

May be repeated for credit.

The seminar will explore theories, issues, and case studies in the sociology of development and social change in Latin America. Topics and cases covered will vary according to students' and instructor's interests.

265W. Women, Culture, and Development
(4) APPELBAUM, BHAVNANI, FORAN

Identifying, reading, and critiquing theoretical and empirical materials from all regions of the Third World that address the interrelated themes of women, culture, and development.

266. Economy and Society
(4) W. BIELBY, FRIEDLAND

May be repeated with different instructors and course content.

This course will consider the relationship between economy and society. Students will analyze non-market determinants of market phenomena, as well as the ways in which markets impinge upon non-market institutions. Topics included in the course will vary.

267. Seminar in Complex Organizations
(4) STAFF

Prerequisite: Sociology 167.

This seminar will examine recent developments in research and theory on organizations.

268. Discrimination in Organizations
(4) BIELBY

Prerequisite: graduate standing.

Explores the forces that generate, sustain, and erode gender and racial discrimination in organizations. Course materials draw upon social theory and research in the fields of organizational analysis, social psychology, labor economics, and legal studies.

270. Deviant Behavior
(4) SUTTON

An introduction to research on social interaction, using the controversy over the labeling theory of mental illness as an example. Development of a theory of social action, and a methodology appropriate to it.

273A-B. Language and the Body
(4-2) LERNER, THOMPSON

Prerequisite: graduate standing.

Same course as Sociology 263 and Linguistics 273A (for Sociology 273A).

Brings together the methods and findings of functional linguistics and those of conversational analysis in a dialogue centering on the visible behavior of the body in the organization of talk-in-interaction, especially gesture, gaze, and body movement.

274. Proseminar in Language, Interaction, and Social Organization
(2-4) STAFF

Prerequisite: consent of instructor.

Same course as Education 274 and Linguistics 274. May be repeated for credit.

Discussion of current research, literature, and theoretical and methodological issues in language and social interaction.

290A-B-C. Teaching Assistant Training Seminar
(4-4-4) STAFF

This three-quarter sequence is required of all entering graduate students. Attendance at the departmental colloquia series is required as part of this course. S/U grading only; no credit allowed toward advanced degree.

The professional roles of sociologists as teacher, researcher, and colleague will be explored. Classroom techniques will be analyzed using video self-criticism and constructive feedback. Colloquia presentations will be considered as alternative modes of teaching effectiveness. Faculty presentations on their own pedagogic methods and current research activity will be included.

294. Special Topics
(4) STAFF

May be repeated for credit on approval of department chair.

Special seminar on research subjects of current interest.

501. Apprentice Teaching
(4) STAFF

Prerequisites: Sociology 290A-B-C and teaching assistant or associate status.

May be repeated for credit; units do not fulfill M.A. unit requirements.

The application of research and theory to classroom practice in the teaching of undergraduate sociology courses. At the teaching assistant level, faculty will supervise individual students as they lead discussion sections, prepare and grade examinations, read written assignments, and engage in individual consultations with undergraduates. Associates will be responsible for courses in their entirety. Weekly meetings with instructor are required.

502. Research Assistance Practicum
(2-4) STAFF

Prerequisites: research assistant status; consent of instructor.

Units dependent upon percentage of time hired: 25% 2 units; 50% 4 units. May be repeated for credit; units do not count toward M.A. unit requirements.

Content will vary with individual students, each of whom will be instructed in the practical aspects of doing research in the area employed—bibliographical work, interviewing, statistical analyses, or questionnaire construction and analysis. Weekly group meetings with instructor are required.

504. Professional Problems
(4) STAFF

Units do not count toward M.A. unit requirements.

Practical problems frequently encountered by graduate students and assistant professors will be identified and analyzed. These include proposal writing, article writing, selecting the right journal or book publisher, preparing a vitae, locating job opportunities, and participating in the "politics" of colleges and universities, as well as academic departments.

591. Graduate Workshop in Sociological Research
(4) STAFF

May be repeated for credit; units do not fulfill M.A. unit requirements.

Presentation of research completed, in progress or proposed, with faculty in attendance. Students are expected to offer critical and useful comments on research.

595AA-ZZ. Group Studies
(4) STAFF

May be repeated for credit on approval of department chair.

Critical review of research in selected fields.

596AA-ZZ. Directed Reading and Research
(2-5) STAFF

May be repeated for credit on approval of department chair. No more than half the graduate units required for the M.A. may be taken in Sociology 596.

Individual tutorial. Plan of study must be approved by department chair.

597AA-ZZ. Individual Study for M.A. and Ph.D. Examinations
(4-8) STAFF

Units do not count toward graduate degrees. Maximum of 24 units per examination.

Normally taken with the student's committee chair.

598. M.A. Thesis Research and Preparation
(1-12) STAFF

Units do not count toward graduate degree.

Research and preparation for the masters thesis. Normally taken with the student's M.A. committee chair.

599. Ph.D. Dissertation Research and Preparation
(2-12) STAFF

Ph.D. dissertation preparation. Normally taken with the student's committee chair.

Spanish and Portuguese

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João Camilo-dos-Santos, Doctorat d'Etat, Université de Haute Bretagne, Rennes, Professor, Director, Center for Portuguese Studies (19th- and 20th-century Portuguese and Brazilian literature, literary theory).

Jorge L. Castillo, Ph.D., Harvard University, Assistant Professor (19th- and early 20th-century Latin American literature, Latin American poetry, history of ideas)

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Antonio Cortijo, Ph.D., UC Berkeley, Assistant Professor (Golden Age literature)

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Suzanne Jill Levine, Ph.D., New York University, Professor (Latin American literature, comparative literature, literary translation)

Francisco A. Lomelí, Ph.D., University of New Mexico, Professor (Spanish-American literature, Chicano literature, Spanish language)

Ellen McCracken, Ph.D., UC San Diego, Professor (comparative literature, Latin American literature and U.S. Latino literature, literary theory)

Timothy M. McGovern, Ph.D., UC Los Angeles, Lecturer with Potential Security of Employment (foreign language methodology; 19th-century Spanish, Portuguese, and Italian literature)

Giorgio Perissinotto, Ph.D., Columbia University, Professor (Hispanic linguistics, medieval literature)

Sara Poot-Herrera, Ph.D., El Colegio de Mexico, Professor (Mexican and Spanish-American literature, literary theory)

Eduardo P. Raposo, Doutoramento, University of Lisbon, Professor (Spanish and Portuguese linguistics, comparative Romance grammar, syntax and semantics, generative grammar)

Harvey L. Sharrer, Ph.D., UC Los Angeles, Generalitat de Catalunya lecturer, Professor (medieval Spanish and Portuguese literatures, Catalan language and culture, comparative medieval literature)

Emeriti Faculty

Carlos H. Albarracín-Sarmiento, P.L., University of La Plata, Professor Emeritus

Pablo Avila, Ph.D., Stanford University, Professor Emeritus

Carlos García Barrón, Ph.D., UC Los Angeles, Professor Emeritus

David Bary, Ph.D., UC Berkeley, Professor Emeritus

Marta Gallo, P.L., University of Buenos Aires, Professor Emerita

Mireya Jaimes-Freyre, Ph.D., Columbia University, Professor Emerita

Nélida López, B.A., Instituto Superior del Profesorado; Buenos Aires, Lecturer Emerita

Enrique Martínez-López, Ph.D., University of Madrid, Professor Emeritus

Allen W. Phillips, Ph.D., University of Michigan, Professor Emeritus

Frederick G. Williams, Ph.D. University of Wisconsin, Professor Emeritus

The Department of Spanish and Portuguese offers undergraduates an opportunity to master the four fundamental linguistic skills—speaking, understanding, reading, and writing—in Spanish and Portuguese and to study the literary, cultural, and linguistic heritages of the Spanish- and Portuguese-speaking peoples in the Iberian Peninsula and the Americas. The department offers the B.A. degree in Spanish and in Portuguese; the M.A. degree with specialties in Hispanic language and culture, Spanish and Spanish-American literature, Hispanic linguistics or studies in bilingualism, and Hispanic, Portuguese, and Brazilian literatures; and the Ph.D. degree in Hispanic languages and literatures.

Students interested in a Spanish or Portuguese major or minor may meet with the department chair and advisors at the beginning of each quarter. Resource persons in the department office are available on a regular basis to advise on academic matters.

Qualified students majoring in Spanish or Portuguese may spend their junior year at the university's Education Abroad center at one of the following locations: Madrid, Alcalá de Henares, Barcelona, Granada, Mexico City, Costa Rica, Santiago de Chile, or Rio de Janeiro.

Students who complete the major in Spanish or Portuguese may enter a variety of careers and graduate programs including education, government service, law, international trade and finance, travel, communications, and publishing. It is important to keep in mind that many of these professional careers require training beyond the undergraduate level, and students with such interests should discuss their plans with an advisor as early as possible.

Students with a bachelor's degree in Spanish or Portuguese who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible. Successful completion of an advanced degree in Spanish is required for issuance of the Community College Instructor's Credential. Students interested in the related professional preparation program should contact the credential advisor prior to the fall quarter of the year in which the advanced degree will be completed.

The Department of Spanish and Portuguese at UCSB is one of the first in the United States to include in its curriculum all five of the official autonomous or independent languages and literatures recognized in the Iberian peninsula. The curriculum also covers the whole spectrum of Hispanic literary traditions, from the Middle Ages to U.S. Chicano and Latino literature.

Center for Portuguese Studies. The Center for Portuguese Studies provides support for teaching and degree programs and promotes the study of the literatures, language, and cultures of the Portuguese-speaking world. Services and activities include awarding student scholarships and stipends; hosting colloquia; maintaining the center library; and sponsoring a publications series, as well as a bi-annual scholarly journal, "Santa Barbara Portuguese Studies." The Center is made possible by an endowment from the Calouste Gulbenkian Foundation in Portugal.

Portuguese Lectureship. The Portuguese government, through the Instituto Camões, established the first Portuguese Lectureship in the United States at UCSB in 1973. It provides a visiting lecturer annually.

Basque Studies. The department has a Basque Studies program, supported by the establishment in 1994 of an endowed chair from the Autonomous Basque Government of Spain. The José Miguel de Barandiarán Chair of Basque Studies, currently held by distinguished Golden Age scholar Juan Bautista Avalle-Arce, promotes the study of Basque language and culture.

Catalan Studies. The Generalitat of Catalonia provides a lectureship to support the study of Catalan language and culture.

Galician Studies. The Xunta of Galicia provides funding in support of the establishment of a Center for Galician Studies and a visiting lecturer.

Samuel A. Wofsy and Robert E. Wilson Awards. Each year the department awards two Wofsy Fellowships to outstanding graduate students at the M.A. and Ph.D. levels. The department also awards two Wilson Scholarships to outstanding junior and senior students.

Senior Honors Program in Spanish or Portuguese

Qualified seniors will be invited to participate in an honors program, designed to allow them to pursue independent research on a topic of particular interest to them. Requirements for admission to the program include 105 units of course credits, completion of a minimum of 30 upper-division units in the major, minimum overall grade-point average of 3.0, and a grade-point average of 3.5 or better in the major. Honors graduates will be identified each year at the head of the graduation list in Spanish or Portuguese and will be designated on university records and diplomas with the legend Distinction in the Major.

Undergraduate Program

Bachelor of Arts—Spanish

Preparation for the major. Spanish 1, 2, 3, 4, 5, and 6 or equivalent; and Spanish 16A or 16B or 25. Spanish majors are required to have a C average in 16A or 16B or 25. Students who possess proficiency in the language should not take courses lower than Spanish 6. Students who receive a grade lower than C in any of the sequence Spanish 1-3 are urged to repeat the course (for no credit if necessary) or provide themselves with a tutor before proceeding to the next course in the sequence.

All upper-division and graduate courses are given in Spanish unless otherwise noted. Spanish 16A or 16B or 25, or its equivalent, is a prerequisite to all upper-division courses in which the language of instruction is Spanish. Spanish 100 (or the equivalent) is a prerequisite to all Spanish linguistics courses.

Upper-division major. Forty-four upper-division units are required, of which 4 must be in Spanish 100, 4 in Spanish 102L, 12 in Spanish 110A-B-C-D, and 8 in Spanish 111A-B-C, or their equivalents as approved by a departmental advisor or the department chair. By petition and upon consultation with the faculty undergraduate advisor, 8 of the remaining 16 units may be selected from Luso-Brazilian literature, or a comparative literature course in which peninsular or Latin-American literature is studied. Additionally, one course of the 8 units may be taken in Chicano/U.S. Latino literature originally written in English (e.g. 139, 179) as an upper-division elective, without petition. A maximum of 4 units of Spanish 128 may be applied to the upper-division major. Spanish 119A-B and/or Spanish 177 are recommended. By petition, a course taught in English translation may be accepted toward the unit requirement with the stipulation that readings for major students be in the Spanish language.

Minor—Spanish

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Spanish and those offered by other departments and applied to the minor.

Preparation for the minor. Spanish 1, 2, 3, 4, 5, 6 or equivalent; and Spanish 16A or 16B or 25 (prerequisite to all upper-division courses).

Upper-division minor. Twenty-four upper-division units, distributed as follows: Spanish 100 (prerequisite to all Spanish linguistics courses), Spanish 102L, one course from Spanish 110A-B-C-D, one course from Spanish 111A-B-C, 8 units of upper-division Spanish electives (may include up to 4 units of the following: a Luso-Brazilian literature course, Portuguese 128, Spanish 126, 127, 174 [film course], or a comparative literature course in which peninsular or Latin-American literature is studied. A maximum of 4 units may be taken from courses taught in English.)

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Bachelor of Arts—Portuguese

Preparation for the major. Portuguese 1, 2, 3, 4, 5, 6, or equivalent. Portuguese 8A-B-C is strongly recommended. Students who wish to make Portuguese their major subject must have maintained at least an average grade of C in the college courses in Portuguese taken prior to their junior year. Transfer students may be tested by examination.

Upper-division major. Forty upper-division units are required, including 102A-B, 105A-B-C, and 106A-B-C. The remaining units must be divided among other courses in the 100 series (excluding Portuguese 195). Portuguese 114, 115, 120, and 125A-B may be accepted toward the unit requirement with the stipulation that readings for the major student be in the Portuguese language. Two courses from History 108A-B, 153, 154A-B, 155A-B, 157A-B-C, or Portuguese 125A-B are recommended.

Students may, by petition, substitute 4 upper-division units in Spanish literature, linguistics, or culture courses; film courses (Spanish 126, 127, 174, Portuguese 128); comparative literature courses in which Hispanic, Portuguese, or Brazilian literature is studied; or Portuguese and Brazilian history courses.

Minor—Portuguese

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in Portuguese and those offered by other departments and applied to the minor.

Preparation for the minor. Portuguese 1, 2, 3, 4, 5, 6 or equivalent (see department).

Upper-division minor. Twenty upper-division units, distributed as follows: Portuguese 102A or 102B, one course from Portuguese 105A-B-C, one course from Portuguese 106A-B-C, 8 units of upper-division Portuguese electives (may include courses taught in English.)

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to departmental requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB," including the mandatory Graduate Record Examination (GRE).

In addition to departmental requirements, candidates for graduate degrees must fulfill the university degree requirements described in the chapter "Graduate Education at UCSB."

Master of Arts—Spanish

Admission

The department requires a bachelor's degree in Spanish or its equivalent. Candidates who are deficient in preparation will be required to take the necessary undergraduate courses to make up deficiencies before beginning work in the M.A. program. A list of undergraduate courses that are deemed to be suitable undergraduate preparation is available from the graduate committee. At the end of the first year of study candidates' work will be evaluated. Those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

Candidates for the M.A. in Spanish will follow one of the three programs described below. The M.A. degree is awarded according to Plan 2 (comprehensive examination) in Programs 1 and 2, and according to Plan 1 (thesis) in Program 3.

Program 1: Language and Culture. This program is designed primarily for students who wish to pursue advanced studies and who do not plan to go on to the Ph.D. It emphasizes an interdisciplinary approach. Each student will have an individual course program, designed in consultation with the program director, approved by the graduate committee, and determined in part by the nature of the student's study topic in Spanish 596. The nature of the program requires proficiency in written and oral standard Spanish.

A minimum of 12 courses is required, at least six of which must be in the graduate series. With prior approval, up to three upper-division or graduate courses from pertinent courses in Portuguese or in other departments may be included. The six graduate courses will include a sequence of two tutorials (Spanish 596) in which the student carries out a study project in Spanish. Results of the project take the form of a written paper and an oral presentation. In addition, each candidate will take a two-hour oral examination, given by a departmental committee, on the study project and on a reading list of essential works of Spanish and Spanish-American literature.

Program 2: Literature. This program is designed primarily for students who plan to pursue a Ph.D. in the field of Spanish and Spanish-American literature. The student must complete a minimum of twelve graduate and upper-division courses, at least nine of which must be in the graduate series. Spanish 121 or 122A-B are required if they have not been taken previously for the B.A. Spanish 212A and at least one two-quarter research seminar in literature (294A-B or 295A-B) are required. Up to two upper-division or graduate courses in Luso-Brazilian literature may count toward the degree. A reading knowledge of a pertinent language other than Spanish is required. Portuguese is acceptable.

The student will prepare an academic program in consultation with the program director, who will provide guidance until the student is prepared to take the comprehensive examinations. The comprehensive examinations consist of six hours of written work based on a departmental reading list and an oral examination of approximately one hour. In order to be accepted to the doctoral program, the student must pass the comprehensive examinations and receive the approval of the graduate committee.

Program 3: Hispanic Linguistics. This program is designed primarily for students who plan to go on to a Ph.D. with an emphasis in either Hispanic linguistics or Spanish-English bilingualism. The focus on Hispanic linguistics provides the student with knowledge and research skills in synchronic and diachronic

linguistics. Contrastive, sociolinguistic, geographical, and historical approaches are followed in the Spanish-English bilingualism emphasis. Completion of Spanish 100 (or equivalent) is a prerequisite for entrance into Program 3. In addition, Spanish 107 and 109 are prerequisites for the Spanish-English bilingualism emphasis.

Each student will have an individual course program, designed in consultation with the program director and approved by the graduate committee. Candidates are expected to complete a minimum of ten graduate and upper-division courses, at least six of which must be in the graduate series, including at least one two-quarter research seminar in Hispanic linguistics (296A-B). At least six of the ten courses must be taken within the department, including no fewer than two upper-division or graduate courses in one area of Hispanic literature.

The candidate, in consultation with a faculty advisor, will pursue an individual study of a specific topic and will present the results in the form of a short thesis. In lieu of the thesis, the candidate will take a master's exam based on two of his/her research papers. These papers must cover two different linguistic areas and must have been submitted to the linguistics faculty for approval. The exam, which will be oral, will center on those aspects covered in the papers, but the candidate should be prepared to respond to questions of general linguistic knowledge, especially in the areas of current linguistic theory and mainstream linguistics that concern the department. A reading knowledge of a pertinent foreign language other than Spanish (Portuguese is acceptable).

Master of Arts—Portuguese

Admission

The department requires a bachelor's degree in Portuguese or its equivalent. Students admitted to the program who are deficient in preparation will be required to take the necessary undergraduate work to make up deficiencies before beginning work in the M.A. program. At the end of the first year of study, students' work will be evaluated and those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

The M.A. degree in Portuguese is awarded according to Plan 2 (comprehensive examination). The program is designed for students who plan to earn a Ph.D. in the field of Portuguese and Brazilian language and literature, and it is normally completed within two years.

The student must complete a minimum of twelve graduate and upper-division courses, at least nine of which must be in the graduate series. Spanish 121, Language and History in the Hispanic World; Spanish 212A, Research in Hispanic and Luso-Brazilian Literature and Linguistics; and at least one two-quarter graduate research seminar in Portuguese or Brazilian literature (294A-B or 295A-B) are required. Up to two upper-division or graduate courses in Spanish or Spanish-American literature may count toward the degree. A reading knowledge of a pertinent language other than Portuguese is required; Spanish is acceptable.

Each student will have an individual course program designed in consultation with the program director, who will provide guidance until the student is prepared to take the comprehensive examinations. The comprehensive examinations consist of six hours of written examinations based on a departmental reading list and an oral examination of approximately one hour.

In order to be accepted to the doctoral program, the student must pass the comprehensive examinations and receive the approval of the graduate committee.

Master of Arts—Spanish and Portuguese

Admission

Applicants wishing to combine graduate work in Hispanic and Luso-Brazilian literatures should have completed an undergraduate major in either Spanish or Portuguese, or the equivalent. Applicants who are deficient in preparation will take the necessary undergraduate work to make up deficiencies before beginning work in the M.A. program. At the end of the first year of study, students' work will be evaluated and those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

The M.A. degree in Spanish and Portuguese is awarded according to Plan 2 (comprehensive examination). The program is designed primarily for students who wish to acquire a broad background in Hispanic and Luso-Brazilian studies, including those who contemplate subsequent work toward the Ph.D.

A minimum of twelve courses is required, at least eight of which must be in the graduate series, including Spanish 212A: Research in Hispanic and Luso-Brazilian Literature and Linguistics, and one two-quarter research seminar. Spanish 121 (if not taken previously for the B.A.) or Spanish 221A-B or Portuguese 221A-B, and a reading knowledge of a pertinent foreign language other than Spanish and Portuguese, are required.

Each student will have an individual course program designed in consultation with the program director and approved by the graduate committee. Its structure will be determined in large part by the student's interests and goals. However, all students are expected to acquire knowledge of the principal works of Hispanic, Portuguese, and Brazilian literatures. The comprehensive examination is based in part on a departmental reading list of important texts; it consists of two written tests, each followed by a one-hour oral examination.

In order to be accepted to the doctoral program, the student must pass the comprehensive examination and receive the approval of the graduate committee.

Doctor of Philosophy—Hispanic Languages and Literatures

The Department of Spanish and Portuguese offers the Ph.D. degree in Hispanic languages and literatures in three areas: Spanish and Spanish-American literature, Luso-Brazilian literature, and Hispanic linguistics.

Admission

Applicants will normally have followed a course of study leading to the M.A. degree in Spanish under Programs 2 or 3, the M.A. in Portuguese, or the M.A. in Spanish and Portuguese (see above).

During the first quarter of residence, the graduate committee, if it has not already done so, will specify, in the case of students who took the M.A. or equivalent on another campus, exactly which areas from our own M.A. program the student has not covered adequately. These deficiencies must be made up by taking courses specified by the graduate committee.

No later than the third, and preferably during the first quarter of residence, the student will present to the graduate committee a proposal for a program of studies which may lead to a subsequent proposal for a Ph.D. dissertation. This preliminary proposal will outline courses, readings, and methods of research aimed at a broad historical period in the field, a restricted genre, or an author or authors. Students in linguistics will outline a topic with a synchronic or diachronic approach, specific level of analysis, a corpus pertinent to the intended object of research, and a suitable method of research. Specific courses and topics set forth in the proposal will be in addition to the required courses cited below, although some overlapping is possible. A more detailed guide to this first step is available from the graduate program assistant of the department.

Within two weeks after submission of the proposal, every doctoral candidate will take a Ph.D. oral candidacy examination conducted by the graduate committee, in which the student will make a brief commentary on a text, followed by a period of questions, to permit an evaluation of the student's potential. The Ph.D. candidacy examination may be repeated once upon the recommendation of the graduate committee. The doctoral committee will be formed after the oral Ph.D. candidacy examination, according to the procedures detailed in the departmental graduate student's handbook.

Degree Requirements

In addition to courses specified in the program proposal, all students will complete two two-quarter research seminars. Ph.D. students in literature will take Spanish 212A, at least one quarter of either Spanish 213 or 214, Spanish 121, if not taken previously, and, if the emphasis is on Spanish or Spanish-American literature, two graduate courses in Luso-Brazilian literature which may include courses in the Portuguese 205 and 206 series. If the emphasis is Luso-Brazilian literature, the student will take two graduate courses in Spanish or Spanish-American literature. Ph.D. students in linguistics will complete Spanish 212B; Spanish 221A-B; four graduate courses in linguistics (two of them reflecting a different level, approach, and methodology from those courses included in the program proposal); and one graduate course in literature approved by the student's doctoral committee.

Before being admitted to candidacy, the

student must demonstrate a good reading knowledge of at least one foreign language besides Spanish and Portuguese, subject to approval by the graduate committee as germane to the student's program proposal. A general command of Spanish or Portuguese will be assumed but not formally tested.

When the requirements are completed and work in the program of studies is sufficiently advanced, the student will submit to the doctoral committee a detailed written proposal for a Ph.D. dissertation. Within two weeks, the student will defend the proposal before the doctoral committee in a dissertation progress examination.

In order to ensure a timely completion of doctoral work, the student is urged to present the dissertation progress examination by the ninth quarter of his/her doctoral program. Note: No dissertation progress examination will be given after the seventh week of the quarter. Any pending language requirement should be completed no later than one month prior to the dissertation progress examination.

Examination Parts and Format. The examination will consist of written and oral parts:

•*Written*
(1) a substantial, detailed written abstract of the full dissertation; (2) the draft of about half of the chapters that will comprise the final dissertation; and (3) and an extensive and relevant bibliography of approximately six to eight pages. These will be presented to the doctoral committee at least two weeks prior to the oral examination.

•*Oral*
An oral defense of this material of approximately one to one and half hours duration.

The doctoral committee will expect the candidate to demonstrate in both the written and oral parts of the examination a clear awareness of the general goals and originality of the dissertation and a thorough knowledge of the present state of scholarship dealing with the chosen topic.

In case the doctoral committee by majority vote finds the written and/or oral part of the dissertation progress examination unsatisfactory, the student may present a modified version of the written work once and be reexamined. The repeated oral examination must take place during the quarter immediately following that in which the examination was first given.

Completion of the Degree. After passing the dissertation progress examination, the student will continue working towards completion of the dissertation in consultation with, and under the guidance of, the dissertation committee chair, and also seeking the input of the other committee members. When the first draft is completed, it will be submitted to the three members who will give feedback and suggest corrections. When the corrections and revisions have been made, a final version will be submitted to the doctoral committee. After the dissertation committee has approved the dissertation and signed the signature page, the student will file the dissertation according to university guidelines. The final version must meet the filing and formatting requirements spelled out in the *Guide to Filing of Theses and Dissertations at UCSB* available at the Graduate Division web site: www.graddiv.ucsb.edu/pubs/filingguide.html.

Summer Institute of Hispanic Languages and Culture

A three-summer intensive program leading to the M.A. degree in Spanish is designed primarily for secondary school teachers of Spanish. Residence at the institute and observance of a "no-English" rule are required.

In addition to the Summer Institute requirements for admission, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB," including the mandatory Graduate Record Examination (GRE).

In addition to the Summer Institute requirements for the M.A. in Spanish, degree candidates must fulfill the university degree requirements described in the chapter "Graduate Education at UCSB."

Prerequisites. The applicant must have an undergraduate major in Spanish or its equivalent and must demonstrate proficiency in speaking and writing Spanish.

Coursework. The M.A. requires 40 units or ten courses across five areas including language, linguistics, culture, literature, and interdisciplinary studies. Since it is not a research-oriented degree, the Summer Institute M.A. will not completely fulfill requirements for entry into the Ph.D. program at UCSB.

Recommended preliminary readings. Students can do the reading for many courses during the winter; lists appear in the winter bulletin, published in the fall and available upon request.

For additional information and application forms, write to the Summer Sessions Office, University of California, Santa Barbara, CA 93106.

***Tinta*, Scholarly Journal.** The graduate student publication gives students the opportunity to gain valuable experience by editing and publishing their own scholarly work.

Spanish Courses

LOWER DIVISION

It is highly recommended that students who have studied Spanish previously take the placement examination administered by the department to determine proper placement in the department's language program. Students will be placed in the Spanish 1-5 sequence depending upon examination scores. Any two courses in the series Spanish 1 through 6 must be taken in sequence and not simultaneously. Also, students may not enroll in a lower level Spanish course than was previously taken in the Spanish 1-6 series.

1. Elementary Spanish
(4) STAFF
Beginning Spanish establishing fundamental auditory and oral skills, with secondary practice in reading and writing; pronunciation, intensive oral practice in short natural dialogs and drills; present tense (regular, stem-changing, and irregular verbs); "ser" and "estar;" object pronouns. Includes laboratory work.

1SS. Intensive Elementary Spanish
(4) STAFF
Beginning course in Spanish establishing auditory and oral skills, with secondary practice in reading and writing Spanish. Pronunciation, intensive oral practice, dialogs, drills. (SS)

2. Elementary Spanish
(4) STAFF
Recommended preparation: Spanish 1 or equivalent.
Continues activities commenced with Spanish 1.

2SS. Intensive Elementary Spanish
(4) STAFF
Recommended preparation: Spanish 1SS.
Continues activities of Spanish 1SS with increased communication and reading skills. Major grammatical structures studied include commands, complex sentences, subjunctive versus indicative, present and imperfect subjunctive, preterite and imperfect, reflexive. Introduction to reading skills. (SS)

3. Elementary Spanish
(4) STAFF
Recommended preparation: Spanish 2 or equivalent.
Completes the basic study of the elements of the language.

3SS. Intensive Elementary Spanish
(4) STAFF
Recommended preparation: Spanish 2SS.
Completes the basic study of the elements of the language. Taught during Summer Session.

4. Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 3 or equivalent.
Begins review of basic grammar and syntax.

4SS. Intensive Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 3 or equivalent.
Begins review of basic grammar and syntax, designed to develop the four fundamental skills: understanding, speaking, reading, writing. Course conducted in Spanish with emphasis on vocabulary building and use of Spanish in practical situations. Refinement of reading skills. (SS)

5. Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 5 or equivalent.
Continues the review of basic grammar and syntax. Course conducted in Spanish.

5SS. Intensive Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 4, 4SS, or equivalent.
Continues the review of basic grammar and syntax begun in Spanish 4, developing the fundamental skills. More vocabulary and practical situations. A play and other supplementary materials are read for discussion and for increasing vocabulary. (SS)

6. Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 5 or equivalent.
An intensive course designed to develop students' skills in reading, oral, and written expression by reading and discussing Hispanic texts and writing compositions on related topics.

6SS. Intensive Intermediate Spanish
(4) STAFF
Recommended preparation: Spanish 5, 5SS, or equivalent.
An intensive course designed to develop students' skills in reading as well as oral and written expression by reading and discussing Hispanic texts and writing compositions on related topics.

8A-B-C. Spanish Conversation
(2-2-2) STAFF
Prerequisites: Spanish 5 or 5SS, or an Advanced Placement Score >=3, or Spanish Placement exam = 6.
Conversational practice through which students learn idioms, conversational courtesies of the language, etc., and improve facility in speaking and understanding the spoken language.

16A. Spanish for Heritage Speakers
(4) STAFF

Recommended preparation: strong speking ability in Spanish to be confirmed b personal interview.

Addresses on university level the needs and strengths of students with Spanish speaking backgrounds but no formal language training in Spanish speaking countries. Emphasizes skill in composition, advanced reading comprehension, standard versus vernacular usages, cross language interference, etc.

16B. Spanish for Heritage Speakers
(4) STAFF

Recommended preparation: strong speking ability in Spanish to be confirmed b personal interview.

Addresses on university level the needs and strengths of students with Spanish speaking background but no formal language training in Spanish speaking countries. Emphasizes skill in composition, advanced reading comprehension, standard versus vernacular usages, cross language interference etc.

25. Advanced Grammar and Composition
(4) STAFF

Prerequisite: Spanish 6 or 6SS, or an AP score greater than or equal to "4", or a Spanish placement exam equal to "6".

Intensive course taught in Spanish designed to reinforce students' comprehension and ability to express themselves in Spanish, both orally and in writing, and to develop the students' vocabulary and awareness of syntactical structures in the language.

30. Introduction to Hispanic Literature
(4) STAFF

Recommended preparation: proficiency in Spanish. Intended for non-majors.

Hispanic literature in relation to literary problems in general. Such topics as: the functions of literature, literary periods, movements and trends. The analysis and interpretation of texts.

UPPER DIVISION

Literature courses taught in English translation or courses taught in English will generally not count towards fulfilling Spanish major requirements. See "Upper-division major" section for exceptions.

100. Introduction to Hispanic Linguistics
(4) PERISSINOTTO, RAPOSO

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Prerequisite to all other upper-division courses in Hispanic linguistics.

Introduction to linguistic theories, methods, and problems as applied to Spanish. Taught in Spanish with Spanish examples.

101. American Spanish
(4) PERISSINOTTO

Prerequisite: Spanish 100.

Geographical, social, and stylistic distribution of phonemic, morphosyntactic, and lexical features in Spanish as spoken in Latin America.

102A-B. Advanced Grammar and Composition
(4-4) MCGOVERN

Prerequisite: Spanish 6.

Required for teaching credential candidates with major in Spanish.

The study of the finer points of Spanish grammar and syntax. Equal stress is placed on written and oral practice of the language.

102L. Introduction to Hispanic Literary Studies
(4) STAFF

Prerequisites: Spanish 16A or 16B or 25; Spanish majors only.

Analysis and interpretation of literary texts. Conceptual tools of traditional and contemporary currents of literary criticism will be applied to a wide selection of texts that shall encompass all established literary genres.

103. Spanish Pronunciation
(4) PERISSINOTTO

Prerequisite: Spanish 100.

Required for teaching credential candidates.

Intensive patterned pronunciation drills and exercises in sound discrimination aimed at familiarizing the student with the mechanics of speech production.

105. Advanced Translation
(4) STAFF

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Oral and written translations to and from target language, allowing students to translate and interpret texts from different fields with accuracy as regards to grammar, syntax, vocabulary, and style. Theoretical points will be explained within contexts studied.

106. Bilingualism
(4) STAFF

Prerequisite: Spanish 100.

The course investigates Spanish-English bilingualism from a linguistic perspective, devoting special attention to the phonic and grammatical systems of native and non-native bilinguals.

107. Languages in Contact
(4) PERISSINOTTO, RAPOSO

Prerequisite: Spanish 100.

The social and historical contexts of the contact between Spanish and Latin, Italian, French, Aztec, Quechua, English, Portuguese, etc. Causes and mechanisms that result in interference and borrowing on the phonic, grammatical, and lexical levels.

108. Spanish and English in Contrast
(4) STAFF

Prerequisite: Spanish 100.

Not open for credit to students who have completed Spanish 108A or 108B.

This course points to similarities and contrasts in the phonic and grammatical systems of Spanish and English.

109. Spanish in the United States: The Language and Its Speakers
(4) PERISSINOTTO

Prerequisite: upper-division standing.

Study of Spanish used in the United States by native and immigrant groups: Mexicans, Chicanos, Cubans, Puerto Ricans and others in Spanish-speaking enclaves. Focus on language and social and cultural manifestations arising in contact between linguistically different groups. Taught in English.

110A-B-C-D. Spanish Literature from the Beginnings to the Present
(4-4-4-4) STAFF

Prerequisite: Spanish 102L (may be taken concurrently).

A. Medieval Spanish literature.
B. Golden Age literature.
C. Eighteenth- and nineteenth-century Spanish literature.
D. Twentieth-century Spanish literature.

111A-B-C. Spanish-American Literature from the Beginning to the Present
(4-4-4) STAFF

Prerequisite: Spanish 102L (may be taken concurrently).

A. Colonial Spanish-American literature.
B. Nineteenth-century Spanish-American literature.
C. Twentieth-century Spanish-American literature.

114A-B-C. The Spanish Language: A Linguistic Approach
(4-4-4) PERISSINOTTO, RAPOSO

Prerequisites: Spanish 100 (for all 3); Spanish 114B is prerequisite for 114C.

Study of the systematic aspects of language structure which make communication possible. Each quarter deals with a different aspect of the Spanish system, as follows:

A. Phonetics and phonemics
B. Morphology and syntax
C. Semantics

115A-B. Masterpieces of Spanish Literature (in English Translation)
(4-4) AVALLE-ARCE, BERMÚDEZ

Prerequisite: upper-division standing.

Readings in English translation and discussion of representative works from the Middle Ages to the end of the sixteenth century, and from the seventeenth century to the end of the twentieth.

116. Juan Ruiz: The Book of Good Love (in English Translation)
(4) SHARRER

Prerequisite: consent of instructor or upper-division standing.

Reading and interpretation of the fourteenth-century Spanish masterpiece in English translation. A study of *The Book of Good Love* in the context of other great works of the period, such as the *Decameron* and the *Canterbury Tales*.

117. Spanish and Spanish-American Essay
(4) CASTILLO, POOT-HERRERA

Prerequisite: Spanish 102L (may be taken concurrently).

Representative essayists of Spain, from Saavedra Fajardo to Ortega y Gasset, and of Spanish America, from Sarmiento and Montalvo to Alfonso Reyes and Octavio Paz.

118A-B. Spain's Culture and Civilization (in English Translation)
(4-4) STAFF

Prerequisite: upper-division standing.

Intended for nonmajors.

The culture and civilization of Spain from its beginnings to the present. Whenever possible, slides, music, and other audio-visual aids will be used.

119A-B. Spanish Institutions and Culture
(4-4) CHECA

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Study of the development of the Spanish nation, with special focus on key social and political institutions, the arts, and major currents of thought.

120A-B. Contemporary Spanish-American Fiction in English Translation
(4-4) LEVINE, MCCRACKEN

A. Reading and discussion of novels and short stories by Borges, Carpentier, Cortázar, García Márquez, Vargas Llosa, and others.

B. Reading and discussion of representative works of contemporary Mexican authors, including Yañez, Rulfo, Fuentes, and others.

121. Language and History in the Hispanic World
(4) STAFF

Prerequisite: Spanish 100.

The different languages spoken in the Hispanic world: their origins, development, convergence, divergence, and diffusion in relation to historical processes.

122A-B. Medieval Spanish Literature
(4-4) SHARRER, AVALLE-ARCE, CORTIJO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110A.

A detailed survey of the main trends in Spanish literature to 1500.

123A-B. Hispanic Balladry
(4-4) SHARRER, CORTIJO

Prerequisite: Spanish 102L (may be taken concurrently).

Spanish 123A equivalent to Spanish 110A; Spanish 123B equivalent to Spanish 111B or 111C.

A. History of the Spanish ballad; Hispanic balladry in Spanish America, the United States, and among the Sephardic Jews.

B. Origin and originality of the Mexican ballads (corridos); their history, themes, and style.

126. Spanish Cinema
(4) CHECA, FUENTES

Study in English of Spanish films of the past forty years both as an art medium and as a document of a changing society. Special attention paid to the work

of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

127. Latin American Cinema
(4) FUENTES

Study in English of Latin American films of the past forty years both as an art medium and as a document of a changing society. Special attention paid to the work of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

128. Creative Writing
(4) POOT-HERRERA

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

An adequate level of language proficiency is needed. P/NP grading.

Designed primarily for students who are inclined to write fictional prose and/or poetry in Spanish.

130. The Fantastic and Its Development in Spanish-American Short Story
(4) CASTILLO, LEVINE, POOT-HERRERA

Prerequisite: Spanish 102L (may be taken concurrently).

Exploration of the multiple manifestations of the fantastic in Spanish American shoirt story from its origin, linked to nineteenth-century sensationalistic journalism, up to neofantastic mode appearing circa 1950, with its more epistemological goals.

131. Spanish Golden Age Poetry I
(4) CHECA, AVALLE-ARCE

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

Lyric poetry of the sixteenth century: Garcilaso, Luis de Leon, San Juan de la Cruz, and others.

132. Spanish Golden Age Poetry II
(4) CHECA, AVALLE-ARCE

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

Spanish lyric poetry of the seventeeth century. Major trends and authors. Close readings of Lope de Vega, Gongora, Quevedo, and other poets.

133. Travel Literature in Spanish America from the Colonial Period to the Present
(4) CASTILLO, POOT-HERRERA

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Equivalent to Spanish 111A or 111B or 111C.

Examination of travelogues, memoirs, and historical accounts from colonial to modern Latin American literature. Focus on the development of travel narratives as a life experience and as an epistemological exploration, and travel both as a notion and a literary form.

134. Golden Age Novel
(4) CHECA, AVALLE-ARCE, CORTIJO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

The main novelistic types of the period: novel of chivalry; pastoral novel; picaresque novel, and others (*Don Quixote* excluded).

13S. Survey of Chicano Literature
(4) LOMELÍ

Same course as Chicano Studies 180.

The course encompasses a general overview of all genres (poetry, novel, theatre, short story and essay) of Chicano literature. A people's sociohistorical experiencces are examined to understand ethnicity, creativity, and world view.

136. Modern Mexican Literature
(4) LOMELÍ, POOT-HERRERA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111C.

Study of texts explaining the development of Mexican culture and literature. Topic and writers: modernism (from Gutiérrez Nájera to Tablada); the novel on the Mexican Revolution (Azuela); and the modern essay (Alfonso Reyes and Octavio Paz).

137A-B. Golden Age Drama
(4-4) CHECA, CORTIJO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

The classic comedia, by Lope, Tirso, Alarcón, Calderón, and other dramatists.

138. Contemporary Mexican Literature
(4) LOMELÍ, POOT-HERRERA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111C.

Continued study of major trends in Mexican literature as evidenced in selected works of the following authors: the poetry of López Velarde and Octavio Paz; the Contemporáneos (Torres Bodet, Villaurrutia, Pellicer); and contemporary fiction (Yañez, Rulfo, Arreola, and Fuentes).

139. U.S. Latino Literature
(4) MCCRACKEN

Prerequisite: upper-division standing.

A comparative study of the literature and culture of the diverse Latino populations of the United States, including Chicano, Puerto Rican, Cuban-American, Dominican-American, and other U.S. Latino groups. Writers, genres, and periods vary from quarter to quarter, emphasizing salient examples of fiction, poetry, drama, the essay, film or art.

140A-B. Cervantes: Don Quijote
(4-4) AVALLE-ARCE, CHECA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

Reading and discussion of the first and second parts of *Don Quijote*.

141. Cervantes: Other Works
(4) AVALLE-ARCE, CHECA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110B.

Readings from the minor works of Cervantes: *Novelas Ejemplares, Comedias, Entremeses* .

142A-B. Don Quixote in English Translation
(4-4) AVALLE-ARCE

Prerequisite: upper-division standing.

Reading, examination, and discussion (all in English) of the first and second parts of Cervantes' masterpiece and its reflection on world literature.

148. Chaos and Order in the Nineteenth-Century Spanish-American Novel
(4) CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111B.

The nineteenth-century Spanish-American novel evinces numerous conflicting topical subgenres: sentimental, indigenist, esclavista. A common denominator is its amorphous and "chaotic" structure. Study of the novel as a hybrid and totalizing genre, a mosaic in which several discourses struggle to suppress the more subversive voices.

150. Eighteenth-Century Spanish Culture
(4) STAFF

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Literature, social history, artistic, and intellectual developments, all essential for a full understanding of subsequent events in both Spain and Spanish America.

1S1A. Catalan for Advanced Students
(4) SHARRER

Prerequisite: upper-division standing.

Recommended preparation: proficiency in Spanish, Portuguese, or another romance language.

Catalan for advanced students. An intensive course for students with no previous study of Catalan.

151B. Catalan for Advanced Students
(4) STAFF

Prerequisite: Spanish 151A.

Continues activities commenced with Spanish 151A.

152. Readings in Catalan
(4) SHARRER

Prerequisite: Spanish 151.

May be repeated once for credit when readings change.

Readings in Catalan. Selected readings in Catalan prose and poetry.

153. Introduction to Basque Studies
(4) AVALLE-ARCE

Spanish Basque culture, the Basque language, its uniqueness, the geography of the Basque country (Euskalerria), its history, its literature, in Basque and in Spanish (in English translation).

154A. Basque for Advanced Students
(4) STAFF

Prerequisite: upper-division standing.

An intensive course for students with no previous study of the Basque language.

1S4B. Basque for Advanced Students
(4) STAFF

Prerequisite: Spanish 154A.

Continues activities commenced in Spanish 154A.

1S6. Introduction to Galician Studies
(4) STAFF

Prerequisite: upper-division standing.

Recommended preparation: proficiency in Spanish or Portuguese.

The uniqueness of the culture and language of Galicia, its history, ethnography, folklore, and literature, in Galician and Spanish.

157. Introduction to Galician Studies in English
(4) STAFF

Prerequisite: upper-division standing.

The uniqueness of the culture and language of Galicia, its history, ethnography, folklore, and literature, in Galician and in Spanish, in English translation.

161. Spanish Romanticism
(4) STAFF

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110C.

Main trends of Spanish romanticism–representative poets, dramatists, and prose writers.

162. Spanish-American Romanticism
(4) CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111B.

Reevaluation of main trends of Spanish-American Romanticism as evidenced in representative poets and prose writers. Traces the reception and transfiguration of continental Romantic topoi and questions the assumption that the Spanish-American Romantic aesthetic is essentially derivative and non-original vis-a-vis its continental counterparts.

165. Realism and Naturalism in Nineteenth-Century Spain
(4) FUENTES, CHECA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110C.

A reading of the main novelists dealing with realism and naturalism in nineteenth-century Spain.

167. Realism and Naturalism in Spanish-American Fiction
(4) CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111B.

Reading of the main novels and short-fiction in late nineteenth-century Spanish America. Realism and Naturalism are studied as counterparts of Modernism: Modernism advocates the science of beauty, Realism and Naturalism defend the beauty of science, attempting a discourse that is both scientifically and aesthetically sound.

169. Literature and Cultural Identity in the Spanish Caribbean
(4) CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111A or 111B or 111C.

Survey of Spanish Caribbean literature from the standpoint of interaction of culture and race. It traces the counterpoint among the diverse ethnic groups that populate the Caribbean and the manner in which the discourse of the oppressor and the oppressed intertwine.

170. The Generations of 1898 and 1927
(4) FUENTES, BERMÚDEZ

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110C or 110D.

Readings of such authors as Unamuno, Baroja, Azorín, Valle-Inclán, Antonio Machado, Ortega, Gómez de la Serna, Guillén, García Lorca, and others, analyzed in their historical and social context.

171. Hispanic Surrealism
(4) FUENTES

Prerequisite: upper-division standing.

Equivalent to Spanish 110D.

Surrealism in Spanish and Spanish-American literature, emphasis 1925-1950; Larrea, Hinojosa, Alberti, Lorca, Aleixandre, Cernuda, Neruda, Paz. New Hispanic Narrative, from M.A. Asturias to present. Films of Buñuel. Paintings of Dalí, Picasso, Miró, etc. Lectures and readings in English.

172. Lorca
(4) BERMÚDEZ

Prerequisite: Spanish 102L (may be taken concurrently).

Major poems and plays of Federico Garcia Lorca, including such works as *Romancero Gitano* , *Poeta en Nueva York* , *Bodas de Sangre* , *Yerma* , *La Casa de Bernarda Alba*.

174. The Hispanic Novel and Cinema
(4) FUENTES

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110C or 110D.

Study of three or four Hispanic novels vis-à-vis their movie versions, permitting analysis of narrative in both genres, using existing films and videos based on masterpieces of Hispanic literature. Taught in Spanish.

175. Contemporary Spanish Literature
(4) FUENTES, BERMÚDEZ

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 110D.

Spanish literature since the Civil War. A study of the main trends of postwar Spanish novel, theater, and poetry, in their historical and social context.

176. Contemporary Spanish Culture
(4) FUENTES, BERMÚDEZ

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

A survey of the political, religious, social, and philosophical issues in twentieth-century Spanish life and letters.

177. Spanish-American Culture
(4) WILLIAMS, CASTILLO

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

Leading social, institutional, intellectual, and artistic trends from the sixteenth century to the present.

178. Mexican Culture
(4) LOMELÍ, PERISSINOTTO, POOT-HERRERA

Prerequisite: Spanish 16A or 16B or 25 (may be taken concurrently).

May not be taken for credit by students who have taken Spanish 180.

Social, institutional, intellectual, and artistic trends in the development of modern Mexico.

179. The Chicano Novel
(4) LOMELÍ, MCCRACKEN

Same course as Chicano Studies 181.

Reading, analysis and crtique of the contemporary Chicano novel as it pertains to the Chicano experience.

180. Mexican Civilization (in English Translation)
(4) LOMELÍ, PERISSINOTTO, POOT-HERRERA

Prerequisite: upper-division standing.

Course not intended for Spanish majors.

Social, institutional, intellectual, and artistic trends in the development of modern Mexico. Taught in English.

181. Hispanic Poetry: 1900 to 1945 in English Translation
(4) BERMÚDEZ

Prerequisite: upper-division standing.

Reading and discussion of twentieth-century Spanish and Spanish-American poets and trends in their socio-historical context. Taught in English.

182. Hispanic Poetry Since 1945 in English Translation
(4) BERMÚDEZ

Prerequisite: upper-division standing.

Study of present day poets—Parra, Octavio Paz, Cardenal, etc.,—and trends. Follows the Latin-American writer's growing awareness and expression of the historical and social reality of life in the Spanish-American world and the United States. Lectures and readings in English.

183AA-ZZ. Selected Authors and Topics in Hispanic Literature
(4) STAFF

Prerequisite: Spanish 102L (may be taken concurrently).

May be repeated for credit to a maximum of 20 units, provided letter designation is different.

Selected authors and topics in Hispanic literature. Topic or author chosen by faculty member.

184. Borges and the Contemporary Spanish-American Short Story
(4) LEVINE, LOMELÍ, POOT-HERRERA, CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111C.

Borges' short stories as pioneers of Spanish-American modern trends in narrative literature; course may include works from authors such as Onetti, Fuentes, García Márquez, etc.

185. The Spanish-American Nueva Novela
(4) LEVINE, LOMELÍ, POOT-HERRERA

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111C.

Readings of such authors as Borges, Rulfo, Fuentes, Vargas Llosa, García Márquez, Donoso. Emphasis put on the innovative structure and language brought to Hispanic literature by the so-called *nueva novela*.

186. Selected Topics in Hispanic Linguistics
(4) STAFF

Prerequisite: Spanish 100.

Topics for the course reflect the research interests of faculty members.

187A-B. Modern Hispanic Drama
(4-4) FUENTES

Prerequisite: Spanish 102L (may be taken concurrently).

A. Representative dramatists of Spain such as Unamuno, Valle-Inclán, García Lorca, Buero Vallejo, and others.

B. Representative Spanish-American dramatists such as Carballido, Solórzano, Wolff, Cuzzani, Márquez, and others.

188. Modernismo
(4) WILLIAMS, CASTILLO, BERMÚDEZ

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111B.

Introduction to the poetry and prose of Hispanic modernismo. Major writers and their most representative works: Martí, Darío, Rodo, Lugones. Lyric poetry, short story, novel, the essay, and other forms are studied.

189. Vanguard Poetry in Spanish America
(4) BERMÚDEZ, LOMELÍ, POOT-HERRERA, CASTILLO

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111C.

A survey of the poetry of the Spanish-American Avant-Garde focusing on its three main tendencies: colloquial or antipoetic poetry, existentially or politically committed poetry, and self-referential, narcissistic poetry.

190. Borges and his Precursors
(4) LEVINE

Prerequisite: upper-division standing.

This course focuses on Borges the reader, and traces in particular his affinities with North American and European literatures. Lectures and readings in English.

194. Spanish American Women's Writing
(4) BERMÚDEZ

Prerequisite: Spanish 102L (may be taken concurrently).

Equivalent to Spanish 111A or 111B or 111C.

An introduction to nineteenth- and twentieth-century Spanish American women's writings. Themes may include women's participation in the formation of national literatures, their engagement with a tradition of women's writing, and issues of authorship and authority.

195. Senior Honors Independent Research
(4) STAFF

Prerequisite: Spanish or Portuguese majors only.

The student will engage in research leading to a paper of considerable depth and complexity on a topic dealing with the literature and/or language of Spain and Spanish America.

196. Internship
(2-3) STAFF

Prerequisites: upper-division standing; Spanish or Portuguese majors only; consent of department.

Students must have a 3.0 overall grade-point average. May be repeated for credit to a maximum of 6 units.

This course enables students to obtain credit for Spanish or Portuguese related internship experience. The course is graded P/NP and must be taken in conjunction with Spanish 199, for which a written project related to the internship experience must be completed.

199. Independent Studies in Spanish
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper division courses in Spanish.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Consent of department.

Independent studies in selected subjects not covered by course offerings.

GRADUATE COURSES

Note: The content of "studies" courses may vary from quarter to quarter and be repeated for credit with the consent of the department graduate advisor.

200. Studies in Synchronic Linguistics
(4) PERISSINOTTO, RAPOSO

Prerequisite: graduate standing.

In-depth study on particular subjects in the field of the phonological, syntactic, or semantic component, or the lexicon, as applied to the modern Spanish.

202. Studies in Diachronic Linguistics
(4) PERISSINOTTO, RAPOSO

Prerequisite: graduate standing.

The problem of linguistic change. Current trends in diachronic linguistics as applied to Spanish. In-depth study on particular subjects of the history of the Spanish language, historical grammar of the Spanish language, or Spanish philology.

203A. Morphology and Syntax I
(4) PERISSINOTTO, RAPOSO

Prerequisite: graduate standing.

An in-depth study of Spanish and Portuguese

synchronic morphology and syntax, both at a descriptive and at a theoretical level. The focus is on morphology, morpho-syntactic processes and single clausal syntactic phenomena.

203B. Morphology and Syntax II
(4) PERISSINOTTO, RAPOSO

Prerequisites: Spanish 203A; graduate standing.

An in-depth study of Spanish and Portuguese synchronic syntax, both at a descriptive and at a theoretical level. The focus is on complex structures of various types and bi-clausal phenomena.

204. The Syntax of Western Iberian Dialects
(4) RAPOSO

Prerequisite: Spanish 203A.

A study of the syntax of Portuguese, Galician and other minor (Leonese) dialects, focusing on their specificity with respect to other Iberian dialects (as exemplified inter alia, with inflected infinitives, special clitic placement, and the relative position of subject and verb in the clause).

20S. Spanish and Portuguese within Romance
(4) RAPOSO

Prerequisite: Spanish 203A.

An in-depth comparative study of selected points of the grammatical systems of Portuguese and Spanish within the overall perspective of the Romance Languages.

207. Description and Measurement of Spanish-English Bilingualism
(4) STAFF

Prerequisites: Spanish 100 or 107 or 108A or 108B or 108C.

Study of the various dimensions of bilingualism. Indentification and delimitation of variables; choice of effective and acceptable units, and elaboration of measurement techniques. Validation of appropriate indices. Sampling techniques; proficiency tests.

209. Dialectology
(4) PERISSINOTTO, RAPOSO

A study of Spanish as it developed and is now spoken in the various parts of Spain and Spanish America, with the distinguishing features of each. The reasons for the distinctive phenomena: morphological, phonological, syntactic, lexigraphic. Indigenous substrata and historical influences (e.g., Anglicisms from the United States) in their formation. Use of texts of different periods.

210A-B-C-D. Spanish Literature for Portuguese Graduate Students
(4-4-4-4) STAFF

Prerequisite: graduate standing in Portuguese.

A. Medieval Spanish literature.
B. Golden Age literature.
C. 18th- and 19th-century literature.
D. 20th-century literature.

211A-B-C. Survey of Spanish-American Literature for Portuguese Graduate Students
(4-4-4) STAFF

Prerequisite: graduate standing in Portuguese.

Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examination.

A. Colonial Spanish-American literature
B. Nineteeth-century Spanish-American literature
C. Twentieth-century literature

212. Approaches and Methods for Research in Hispanic and Luso Brazilian Literature and Linguistics
(4) PERISSINOTTO, SHARRER, RAPOSO

Approaches and methods for research in Hispanic and Luso-Brazilian literature and linguistics. Study of main bibliographic resource with particular emphasis on computer-aided research and resulting in the production of a substantive on a field of graduate research.

213. Theory of Literary Criticism
(4) CHECA, LEVINE, POOT-HERRERA, MCCRACKEN

Analysis and application of methods of current literary theory and criticism in relation to principal texts in Spanish and Spanish American literature. Techniques of literary scholarship.

214. History of Hispanic Literary Criticism
(4) AVALLE-ARCE, CHECA, POOT-HERRERA

A diachronic survey of the theory of literature and literary criticism in the West, from the Middle Ages to the present, with particular attention to the Hispanic world.

21S. Women Authors of the Spanish Language
(4) STAFF

An examination of women's strategies of self-figuration, traditions of female expression, women's relationship to authorship and authority, and the relationship of Spanish-language writing to contemporary feminist criticism.

216. Female Voice and Misogyny
(4) CORTIJO

Prerequisite: graduate standing.

A study of courtly love (concepts, attitudes, social context) and female narrative voice in Medieval and Renaissance Spanish literature. Readings drawn (among others) from Libro de Buen Amor, Celestina, sentimental, chevalric and pastoril romances and fifteenth and sixteenth century lyric compositions.

217. Rhetorical Theory of Literature (from Antiquity to the Twentieth Century)
(4) CORTIJO

Prerequisite: graduate standing.

A study of literary theory (Rhetoric and Poetics) from Aristotle to the twentieth century, with special emphasis on Spanish Golden Age theoretical approaches to the literary phenomenon.

218. Individual Hispanic Authors and Special Topics
(4) STAFF

May be repeated for credit to a total of 24 units (six courses, each a different author).

Intensive study of the work of an individual Hispanic author, to be chosen by the instructor.

219. Narcissistic Fiction in Hispanic Literature
(4) CASTILLO

Prerequisite: graduate standing.

Exploration of the theory and practice of metafictional, self-referential works, that is, literature about literature, in Hispanic literature, vis-a-vis the development of a narcissistic mode in the prose and poetry of the nineteenth and twentieth centuries.

221A-B. History of Spanish and Portuguese Languages
(4-4) PERISSINOTTO, RAPOSO

Prerequisite: Spanish 121.

Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

A. Selected topics in historical phonology in light of recent scholarship.
B. Selected topics in historical morphology and syntax in light of recent scholarship.

222A-B. Studies in Medieval Peninsular Literature
(4-4) PERISSINOTTO, SHARRER, AVALLE-ARCE

Selected topic studied in the light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

230A-B-C-D-E-F. Studies in Spanish Literature of the Sixteenth and Seventeenth Centuries
(4-4-4-4-4-4) CHECA, AVALLE-ARCE

A total of 24 units is possible for students wishing to enroll in all sections of Spanish 230.

Study courses will be taught under general title, with following divisions:

A. Poetry
B. Narrative prose
C. Comedia
D. Auto sacramental
E. The mystics
F. Moralists and satirists

240A-B. Studies on Cervantes
(4-4) AVALLE-ARCE

Selected topics studied in the light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

24S. Studies in Spanish-American Colonial Literature
(4) AVALLE-ARCE, POOT-HERRERA

Selected topics from the sixteenth, seventeenth, and eighteenth centuries.

260. Studies in Nineteenth-Century Spanish Literature
(4) CHECA, FUENTES

Seminars covering selected authors, theses, or genres from the period in question.

270. Studies in Twentieth-Century Spanish Literature
(4) FUENTES, BERMÚDEZ

Seminars covering selected authors, theses, or genres from the period in question.

275. Spanish Literature Since the Civil War
(4) FUENTES, BERMÚDEZ

Spanish literature since the civil war. Spanish literature from 1939 to the present; theatre, poetry, novel.

280. Studies in Twentieth-Century Spanish-American Poetry
(4) FUENTES, POOT-HERRERA, CASTILLO, BERMÚDEZ

Seminar in selected authors and aspects of nineteenth, and twentieth-century Spanish-American poetry. Postmodernist and vanguard schools.

281. Poetry and Knowledge Within the Hispanic Tradition
(4) CASTILLO

Prerequisite: graduate standing.

Exploration of the relationship between lyric poetry and metaphysical knowledge, between language and the unutterable, in some representative poems of the Hispanic Tradition. Poets may include: Fray Luis de Leon, San Juan de la Cruz, Sor Juana de la Cruz, Nunez de Arce, Dario, Herrera y Reissig, Gorostiza, and Pales Matos.

283. El Modernismo
(4) CASTILLO

The influence of Rubén Darío and his followers on the prose and poetry of Spanish America and Spain: 1888 to 1920.

285. Studies in Twentieth-Century Spanish-American Fiction
(4) LEVINE, LOMELÍ, POOT-HERRERA, CASTILLO

Seminar in selected authors of twentieth-century Spanish-American novel.

287. Literature and Culture of the Postmodern Americas
(4) MCCRACKEN

Prerequisite: graduate standing.

A study of hybridity and postmodernity in the narrative cultural productions of Latinos in the Americas, focusing on the eroding but not yet effaced borders between various cultural and social spheres. Readings drawn from Latin American and U.S. Latino writers and theorists such as García Canclini, Cortázar, Piglia, Puig, Cisneros, Alvarez, Morales.

290. Literature of a Single Spanish-American Country
(4) STAFF

May be repeated for credit for different countries.

An intensive study of the literature of a particular Spanish-American country each time the course is offered.

294A-B. Research Seminar in Spanish-American Literature
(4-4) STAFF

In-progress grading with grading for both quarters to be given at the end of the second quarter.

A. Primarily intended to train students in research techniques; background material and selection of topic.

B. Completion of research paper, reporting regularly to class on progress of work.

295A-B. Research Seminar in Spanish Literature
(4-4) STAFF

In-progress grading with grading for both quarters to be given at the end of the second quarter.

A. Primarily intended to train students in research techniques; background material, critical approach, and selection of topic.

B. Completion of research paper, reporting regularly to class on progress of work.

296A-B. Research Seminar in Spanish Linguistics
(4-4) PERISSINOTTO, RAPOSO

In-progress grading with grading for both quarters to be given at the end of the second quarter.

A. Primarily intended to train students in research techniques; background material and selection of topic.

B. Completion of research paper, reporting regularly to class on progress of work.

590. Teaching Assistant and Associate Training Course
(2) STAFF

Prerequisites: graduate standing and appointment as a teaching assistant or associate in Spanish.

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all first-year teaching assistants and student associates in Spanish.

Instruction in methodology for teaching lower-division Spanish courses at UCSB.

591. Teaching Assistant Practicum
(4) STAFF

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all teaching assistants in Spanish.

Supervised teaching of lower-division Spanish courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

592. Teaching Associate Practicum
(4) STAFF

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all student associates in Spanish.

Supervised teaching of lower-division Spanish courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

593. Research Assistant Practicum
(2-4) STAFF

Units earned do not apply toward completion of advanced degrees. S/U grading only.

Supervised research in Hispanic literatures, linguistics, or culture.

594AA-ZZ. Special Topics
(1-4) STAFF

A special seminar on research subjects of current interest.

595AA-ZZ. Directed Teaching of Literature/Linguistics
(4) STAFF

Prerequisites: doctoral candidate with teaching assistant or associate instructor status.

Individual tutorial. Application of research and theory to classroom practice in teaching of undergraduate literature or linguistics courses. The instructor of the literature or linguistics course will supervise the student as collaborator in the planning and teaching of it.

596. Directed Reading and Research
(2-4) STAFF

Prerequisites: consent of instructor; approval of department chair.

Individual tutorial. A written proposal for each tutorial must be approved by student's program advisor and by the department chair. The number of units which a student may take in this series depends on the nature of the program and the consent of the advisor or the departmental graduate committee.

597AA-ZZ. Individual Study for M.A. Comprehensive and Ph.D. Examinations
(2-8) STAFF

Prerequisites: consent of advisor; approval of department chair.

No unit credit allowed toward advanced degrees.

Individual study for M.A. comprehensive and Ph.D examinations. Instructor should be student's major professor or chair of doctoral committee.

598A-Z. Master's Thesis Research and Preparation
(2-12) STAFF

Prerequisites: consent of instructor; approval of department chair.

No unit credit granted toward degree.

Only for research underlying the thesis and writing of the thesis.

599AA-ZZ. Ph.D. Dissertation Research and Preparation
(2-12) STAFF

Prerequisites: approval of instructor and department chair.

S/U grading only.

Ph.D. dissertation preparation. Only for research in preparing and writing of the dissertation. Instructor should be the chair of student's doctoral committee.

Spanish Courses Taught in English

The following courses require no knowledge of a foreign language. See course descriptions above.

Spanish 109, 115A-B, 116, 118A-B, 120A-B, 126, 127, 135, 139, 142A-B, 153, 157, 171, 179, 180, 181, 182, 190

Portuguese Courses

LOWER DIVISION

1. Elementary Portuguese
(4) STAFF

Beginning course in Portuguese establishing fundamental auditory and oral skills, with secondary practice in reading and writing, pronunciation, intensive oral practice. Includes laboratory work.

2. Elementary Portuguese
(4) STAFF

Recommended preparation: Portuguese 1 or equivalent.

Continues activities commenced with Portuguese 1.

3. Elementary Portuguese
(4) STAFF

Recommended preparation: Portuguese 2 or equivalent.

Completes the basic study of the elements of the language.

4. Intermediate Portuguese
(4) STAFF

Recommended preparation: Portuguese 3 or equivalent.

Begins review of basic grammar and syntax. (F)

5. Intermediate Portuguese
(4) STAFF

Recommended preparation: Portuguese 4 or equivalent.

Continues review of basic grammar and syntax. (W)

6. Intermediate Portuguese
(4) STAFF

Recommended preparation: Portuguese 5 or equivalent.

An intensive course designed to develop students' skills in reading and oral and written expression by reading and discussing Luso-Brazilian texts and writing compositions on related topics. (S)

8A-B-C. Portuguese Conversation
(2-2-2) STAFF

Recommended preparation: Portuguese 3 or equivalent.

Portuguese conversation; courses conducted entirely in Portuguese.

10. Beginning Intensive Portuguese
(12) STAFF

Designed for high school students and university undergraduates who desire to accelerate and complete a year of language work in a summer session and for graduate students wishing to fulfill the graduate language requirement with Portuguese as one of the languages in which they are competent to read works in their major field. Prepares students to continue with second year Portuguese successfully. (SS)

11. Portuguese for Graduate Students
(S) STAFF

Prerequisite: graduate standing.

No unit credit allowed toward advanced degrees.

Designed primarily for graduate students who already possess a knowledge of another romance language and who wish to acquire a reading knowledge of Portuguese.

16. Portuguese for Spanish Speakers
(S) STAFF

Prerequisite: consent of instructor.

Recommended preparation: proficiency in a romance language such as Spanish.

Addresses on a University-level the needs and strengths of students with Spanish speaking fluency and background but no formal training in Portuguese. Emphasizes skill in composition, advanced reading comprehension, standard versus vernacular usages, etc.

20. Intermediate Intensive Portuguese
(12) STAFF

Recommended preparation: Portuguese 3, 10, or equivalent.

Designed for high-school students and university undergraduates and graduates who desire to accelerate and complete a year of language work in a summer session. An intensive course designed to review basic grammar and syntax, develop oral and written expression. (SS)

25. Advanced Portuguese
(S) STAFF

Recommended preparation: Portuguese 3 or equivalent.

Course is designed to reinforce students' comprehension and ability to express themselves in Portuguese, both orally and in writing, and to develop the students' vocabulary and awareness of syntactical structures in the language.

UPPER DIVISION

Literature courses taught in English translation or courses taught in English will generally not count towards fulfilling Portuguese major requirements. See "Upper-division major" section for exceptions.

102A-B. Advanced Grammar and Composition
(4-4) STAFF

Prerequisite: upper-division standing.

Recommended preparation: Portuguese 6 or equivalent.

Study of the finer points of Portuguese grammar and syntax. Equal stress is placed on written and oral practice of the language. The work in class will consist of careful study of essays and articles.

105A-B-C. Survey of Portuguese Literature
(4-4-4) CAMILO-DOS-SANTOS, SHARRER, WILLIAMS

Prerequisite: upper-division standing.

Recommended preparation: Portuguese 6 or equivalent.

A. Portuguese literature from its origins to the sixteenth century.

B. Portuguese literature of the sixteenth, seventeenth, and eighteenth centuries.

C. Portuguese literature of the nineteenth and twentieth centuries.

106A-B-C. Survey of Brazilian Literature
(4-4-4) CAMILO-DOS-SANTOS, WILLIAMS

Recommended preparation: Portuguese 6 or equivalent.

A. Brazilian literature of the colonial period.
B. Brazilian literature from the nineteenth century to 1922.
C. Brazilian literature from 1922 to present.

113. From Spanish to Portuguese: Sounds, Words, and Phrases
(4) RAPOSO

Prerequisite: upper-division standing.

Recommended preparation: Spanish 100, Portuguese 6, or equivalent.

This course provides an access to points of Portuguese grammar for those who have a good command of Spanish, by focusing on the similarities and differences between the two languages, taking Spanish as a starting point.

114. Literature of the Portuguese Expansion
(4) CAMILO-OOS-SANTOS

Recommended preparation: Portuguese 6 or equivalent.

Literary masterpieces of the Portuguese Golden Age (fifteenth and sixteenth centuries, and part of seventeenth century): chronicles of the discoveries, the epic poem *Os Lusíadas* by Camões, dramatic narratives of shipwrecks—all translated into English.

115AA-ZZ. Brazilian Literature in English Translation
(4) CAMILO-OOS-SANTOS

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Significant writers and poets of nineteenth- and twentieth-century Brazil. Topic or author to be chosen by faculty member. Each course on a different topic. Taught in English.

120AA-ZZ. Portuguese Literature in English Translation
(4) CAMILO-DOS-SANTOS

May be repeated for credit to a maximum of 8 units provided letter designations are different.

A presentation of major works in Portuguese to reveal the interest and the originality of Portuguese literature through the ages. Topics or author to be chosen by faculty member. Each course on a different topic.

125A-B. Culture and Civilization of Portugal and Brazil
(4-4) CAMILO-DOS-SANTOS

Prerequisite: upper-division standing.

The distinctive features of Portugal and Brazil as manifested in their institutions, art, music, and literature. Taught in English.

A. Portugal
B. Brazil

128AA-ZZ. Luso-Brazilian Cinema
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 8 units provided letter designations are different.

Portuguese and Brazilian films of the past forty years both as an art medium and as a document of changing society. Topic or author to be chosen by faculty member. Each course on a different topic. Taught in English.

132A-B. Luis de Camões
(4-4) CAMILO-OOS-SANTOS

Recommended preparation: Portuguese 6 or equivalent.

A study of Camões' lyric poetry and epic poem, *Os Lusíadas*.

150AA-ZZ. Advanced Studies in Portuguese
(12) CAMILO-OOS-SANTOS, RAPOSO

Prerequisite: upper-division standing.

Recommended preparation: Portuguese 6 or equivalent.

May be repeated for credit.

A comprehensive three-track, three hour per day, course that correlates advanced grammar and composition with literary masterpieces of the Portuguese language and culture of the Luso-Brazilian world, all epochs. (SS)

170. African Literature in Portuguese
(4) CAMILO-OOS-SANTOS

Prerequisite: upper-division standing.

Recommended preparation: Portuguese 6 or equivalent.

Modern authors from Cabo Verde, Angola, and Mozambique.

180. African Literature in Portuguese in English Translation
(4) STAFF

African writers from the ex-Portuguese colonies, presented in English translation, for the benefit of students in African Studies or related areas, who do not know Portuguese.

183AA-ZZ. Studies in Portuguese Literatures
(4) CAMILO-DOS-SANTOS, SHARRER, WILLIAMS

Prerequisite: upper-division standing.

May be repeated to a maximum of 20 units provided the letter designation is different.

Recommended preparation: Portuguese 6 or equivalent.

Topic or author chosen by faculty member; each course on a different topic.

184AA-ZZ. Studies in Portuguese Linguistics
(4) RAPOSO

Prerequisite: upper-division standing.

May be repeated for a maximum of 20 units, provided letter designation is different. Students limited to one topic per quarter.

Topic to be chosen by faculty member.

185. Brazilian Novel of the Twentieth Century
(4) CAMILO-OOS-SANTOS, WILLIAMS

Prerequisite: upper-division standing.

Recommended preparation: Portuguese 6 or equivalent.

A study of the Brazilian novel from Machado de Assis to the present, including authors such as Lima Barreto, Érico Veríssimo, Guimarães Rosa, Lins do Rego, Graciliano Ramos, Mário de Andrade, Oswald de Andrade, Jorge Amado, Clarice Lispector.

189. Brazilian Modernism
(4) CAMILO-DOS-SANTOS, WILLIAMS

Recommended preparation: Portuguese 6 or equivalent.

An introduction to the poetry and prose fiction of the Brazilian avant-garde of the 1920s and 1930s.

195. Senior Honors Independent Research
(4) STAFF

Prerequisite: admission to the Portuguese senior honors program.

The student will engage in research leading to a paper of considerable depth and complexity on a topic dealing with the literature and/or language of Portugal, Brazil, or Portuguese-speaking Africa.

199. Independent Studies in Portuguese
(1-5) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in Portuguese.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Independent studies in selected subjects not covered by course offerings.

GRADUATE COURSES

Note: The content of "studies" courses may vary from quarter to quarter and may be repeated for credit with the consent of the department graduate advisor.

205A-B-C. Survey of Portuguese Literature for Spanish Graduate Students
(4-4-4) CAMILO-OOS-SANTOS, SHARRER

Prerequisites: Portuguese 105A-B-C or concurrent attendance.

Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

A. From origins to sixteenth century.
B. Sixteenth, seventeenth, and eighteenth centuries.
C. Nineteenth and twentieth centuries.

206A-B-C. Survey of Brazilian Literature for Spanish Graduate Students
(4-4-4) CAMILO-OOS-SANTOS

Prerequisites: Portuguese 106A-B-C or concurrent attendance.

Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

A. Colonial period
B. From nineteenth century to 1922
C. From 1922 to present

221A-B. History of Portuguese and Spanish Languages
(4-4) RAPOSO

Prerequisites: Spanish 121A-B (may be taken concurrently).

Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. or Ph.D. examinations.

A. Selected topics in historical phonology in light of recent scholarship.
B. Selected topics in historical morphology and syntax in light of recent scholarship.

222. Studies in Galician-Portuguese Medieval Literature
(4) SHARRER

Selected topics in light of recent scholarship.

232A-B. Studies on Camões
(4-4) CAMILO-DOS-SANTOS

Selected topics in light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. or Ph.D. examinations.

240. Studies in Portuguese Mannerist and Baroque Literature
(4) CAMILO-DOS-SANTOS

Portuguese poetry and prose of the sixteenth and seventeenth centuries.

245. Studies in Brazilian Colonial Literature
(4) CAMILO-OOS-SANTOS

Selected authors and topics in Brazilian literature of the sixteenth, seventeenth, and eighteenth centuries.

250. Studies on Eça de Queirós and the Portuguese Realistic Novel
(4) CAMILO-OOS-SANTOS

Eça de Queirós's work, his conception of realism, his influence on Spanish, Spanish-American and Brazilian literature, his most important followers.

255. Studies on Machado de Assis and the Brazilian Novel
(4) CAMILO-OOS-SANTOS

Machado de Assis' novelistic work; its innovative approach as a basis of modern fiction. Other novelists of his time will also be studied.

260. Studies in Brazilian Post-Independence Literature
(4) CAMILO-OOS-SANTOS

Selected authors and literary movements of the nineteenth and twentieth centuries.

265. Studies on Fernando Pessoa and the Avant-Garde
(4) CAMILO-DOS-SANTOS

Pessoa's poetry, its influence on contemporary Portuguese poetry, and its relationship to the world avant-garde movement.

283AA-ZZ. Individual Luso-Brazilian Authors and Special Topics
(4) STAFF

May be repeated for a total of 24 units (six courses, each a different author or topic).

Intensive study on the work of an individual Luso-Brazilian author or topic, to be chosen by the instructor.

295A-B. Research Seminar in Portuguese and Brazilian Literature
(4-4) CAMILO-DOS-SANTOS

A two-quarter in-progress sequence course with grades for both quarters issued upon completion of the final quarter.

A. Primarily intended to train students in research techniques, background material, and selection of topics.
B. Completion of research paper, reporting regularly to class on progress of work.

296A-B. Research Seminar in Portuguese Linguistics
(4-4) RAPOSO

A. Trains students in research techniques; background material and selection of topic.
B. Completion of research paper, reporting regularly to class on progress of work.

590. Teaching Assistant and Associate Training Course
(2) STAFF

Prerequisites: graduate standing and appointment as a teaching assistant or student associate in Portuguese.

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all first-year teaching assistants and student associates in Portuguese.

Instruction in methodology for teaching lower-division Portuguese courses at UCSB.

591. Teaching Assistant Practicum
(4) STAFF

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all teaching assistants in Portuguese.

Supervised teaching of lower-division Portuguese courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

592. Teaching Associate Practicum
(4) STAFF

Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all student associates in Portuguese.

Supervised teaching of lower-division Portuguese courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

593. Research Assistant Practicum
(2-4) STAFF

Units earned do not apply toward completion of advanced degree. S/U grading only.

Supervised research in Luso-Brazilian literature, linguistics, or culture.

594. Special Topics
(1-4) STAFF

A special seminar on research subjects of current interest.

595AA-ZZ. Directed Teaching of Literature/Linguistics
(4) STAFF

Prerequisites: doctoral candidate with teaching assistant or associate instructor status.

Individual tutorial. Application of research and theory to classroom practice in teaching of undergraduate literature or linguistics courses. The instructor of the literature or linguistics courses will supervise the student as collaborator in the planning and teaching of it.

596. Directed Reading and Research
(2-4) STAFF

Prerequisite: consent of program advisor.

Individual tutorial. A written proposal for each tutorial must be approved by student's program advisor and by the department chair. The number of units which a student may take in this series depends on the nature of the program and the consent of the advisor or the departmental graduate committee.

597AA-ZZ. Individual Study for Master's Comprehensive or Ph.D. Examinations
(2-12) STAFF

S/U grading. No unit credit allowed toward advanced degrees.

Individual study under instructor who is a member of the student's program committee.

599AA-ZZ. Ph.D. Dissertation Research and Preparation
(2-12) STAFF

S/U grading only.

Research and writing of the dissertation. Instructor should be the chair of the student's doctoral committee.

Portuguese Courses Taught in English

The following courses require no knowledge of a foreign language. See course descriptions above.

Portuguese 114, 115AA-ZZ, 120AA-ZZ, 125A-B, 128AA-ZZ, 180.

Speech and Hearing Sciences

Department of Speech and Hearing Sciences,
Division of Mathematical, Physical, and Life Sciences,
Snidecor Hall 1663D;
Telephone (805) 893-2281
E-mail: gandara@humanitas.ucsb.edu
Web site: speech.ucsb.edu
Acting Chair: vacant

Faculty

Jeffrey L. Danhauer, Ph.D., Ohio University, Professor (audiology)

Janis Costello Ingham, Ph.D., University of Kansas, Professor (speech and language pathology)

Roger J. Ingham, Ph.D., University of New South Wales, Professor (speech and language pathology)

Emeriti Faculty

Sanford E. Gerber, Ph.D., University of Southern California, Professor Emeritus (pediatric audiology)

The speech and hearing sciences major is the only such program among the nine campuses of the University of California. Degrees are offered at the B.A., M.A., and Ph.D. levels.

Note: No undergraduate students are currently being accepted into the major. Further, admission to the B.A., M.A., and Ph.D. programs in the Department of Speech and Hearing Sciences is suspended pending administrative and academic review. Students may pursue the minor in speech and hearing sciences.

Undergraduate Program

No undergraduate students are currently being accepted into the major.

The B.A. program in speech and hearing sciences is designed to provide students with a rigorous grounding in the development of normal communication in the speech, language, and hearing domains and with an understanding of the various factors (developmental, psychological, environmental, genetic, neurologic, anatomic) that can disrupt the communication system and produce communication disorders. Through coursework and observation in the campus clinic, students also gain an appreciation of methods for the assessment of communication in children and adults and an overview of the range of intervention procedures used for the treatment of persons with communication disorders. Preparation for the major includes interdisciplinary coursework central to the thrust of the major in mathematics, physical sciences, behavioral sciences, and the humanities. Students who successfully complete the B.A. in speech and hearing sciences are then prepared to enter graduate programs throughout the country for academic and clinical education leading to the master's degree and to professional preparation as speech-language pathologists or audiologists. Undergraduate students are urged to consult with the department's peer advisor or faculty undergraduate advisor each quarter. The department office will provide lists of the required and elective courses and their sequences.

Senior Honors Program

The Department of Speech and Hearing Sciences has a senior honors program for qualified upper-division students. Details concerning the program may be obtained from the department office.

Bachelor of Arts—Speech and Hearing Sciences

Preparation for the major. Speech and Hearing Sciences 50, 51, 52; Interdisciplinary Studies 5 or Computer Science 1A; Linguistics 20; Psychology 1, 5 (or PSTAT 5), and 105; and EEMB 25 or MCDB 25.

Upper-division major. 48 upper-division units are required, distributed as follows: Speech and Hearing Sciences 100L, 101L, 120, 121, 122, 128, 131, 131L, 133, 133L, 153, 154, 155, and 166. One of the following courses must be taken: Speech and Hearing Sciences 167 or 195.

Senior honors students are required to take Speech and Hearing Sciences 200 and 182A-B. The latter may be used to fulfill the required elective course.

Minor—Speech and Hearing Sciences

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in speech and hearing and those offered by other departments and applied to the minor.

Preparation for the minor. Speech and Hearing Sciences 50; EEMB 25 or MCDB 25; Linguistics 20; and Psychology 1.

Upper-division minor. Twenty-four upper-division units, distributed as follows: Speech and Hearing 120, 121, 122, 128, 131, 135, 154, 155, 166, 167, 199; Linguistics 137; Psychology 105. Students may choose from any of the 24 units provided one psychology course is used, from the list above or they may choose their courses from one of the following more restricted options: Option 1 - Recommendations for Combined Speech Language and Hearing Curriculum: Linguistics 137; Speech and Hearing Sciences 120, 122, 128; Speech and Hearing Sciences 131 or 135; Speech and Hearing Sciences 154 or 155 or 167. Option 2 - Recommendation for Curriculum with Emphasis on Speech and Language Disorders: Linguistics 137; Speech and Hearing Sciences 120, 122, 154, 155, 167. Option 3 - Recommended for Curriculum with Emphasis on Hearing Disorders: Speech and Hearing Sciences 120, 121*, 122, 128*, 131*, 135*

** completion of these courses qualifies students for audiometrist credential*

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

Note: Admission to graduate programs in the Department of Speech and Hearing Sciences is suspended pending administrative and academic review.

In addition to departmental requirements, candidates for graduate degrees must meet the university degree requirements described in the chapter "Graduate Education at UCSB."

Master of Arts—Speech and Hearing Sciences

The master's degree program is designed primarily to provide the theoretical and clinical background necessary to practice in the fields of speech-language pathology and audiology, although it is also possible to obtain a nonclinical master's degree. Interested students should consult directly with the department's chair of graduate admissions. The master's and M.A./Ph.D. programs are designed for full-time students only.

The master's degree student shall complete all coursework required for the master's degree, including Speech 200 and Speech 598 (up to 6 units). Additional requirements: (1) introductory statistics; and (2) an original research thesis. The student must also complete coursework and practica requirements of the various licensing agencies to practice speech-language pathology or audiology in given sites. For information on specific coursework and practica requirements, contact the graduate advisor, Department of Speech and Hearing Sciences.

Doctor of Philosophy—Speech and Hearing Sciences

The doctoral program in speech, language, and hearing sciences is a full-time program designed to prepare scholars and researchers for positions in university and research settings. The doctoral program has an applied research orientation and emphasizes research into the areas of etiology, assessment, measurement, and treatment of human communication disorders. Complementary coursework for students with specialized interests is also available from other UC campuses such as UC Berkeley, UC San Diego, and UC San Francisco. Entering graduate students normally have an undergraduate degree, or its equivalent, in the area. Many students will have completed master's degrees in speech-language pathology or audiology as well. Students who do not already have a master's degree in speech and hearing sciences will acquire an M.A. in the process of completing the doctoral program.

Completion of the Ph.D. program requires: (1) satisfactory demonstration, by examination and/or coursework, of mastery of the scientific fields considered to be the core of the speech, language, and hearing sciences: speech production/perception processes and disorders, language processes and disorders, hearing processes and disorders, and research methodology; (2) reading proficiency in one or two foreign languages or a specialized skill area such as computer programming judged by the advisory committee to be necessary to the student's research; (3) demonstrated proficiency in university-level teaching; (4) enrollment in research activities with at least one faculty member each quarter; (5) satisfactory completion of written and oral qualifying examinations; and (6) completion and oral defense of an acceptable doctoral dissertation. Detailed information describing the doctoral program and its faculty is available from the department office. Students are encouraged to interview with the relevant faculty prior to application.

Speech and Hearing Sciences Courses

LOWER DIVISION

50. Introduction to Communication Disorders
(4) J. INGHAM
Recommended preparation: Interdisciplinary 1 or 100.
Description and illustration of speech, language, and hearing of children and adults with a variety of communication disorders including phonology, stuttering, voice, aphasia, language, and hearing disorders. Includes consideration of precipitating and maintaining factors.

51. Neuroanatomy and Neurophysiology for Speech, Language, and Hearing
(2) J. INGHAM
Prerequisites: MCDB or EEMB 25; and, EEMB 20 or MCDB 20 or EEMB 23 or MCDB 28.
Autotutorial, audio-visual instruction of neuroanatomy and neurophysiology for speech, language, and hearing. Computerized testing of competence is required.

UPPER DIVISION

120. Phonemics in Communication Disorders
(4) J. INGHAM
Prerequisites: Speech and Hearing Sciences 50, and Linguistics 20.
Identification of the phonemes of American English and their symbolic representation, including modifying symbols for deviant phonology. Acoustic, physiological, and perceptual parameters of speech sound formation.

121. Physics of Speech and Hearing
(4) STAFF
Recommended preparation: Speech and Hearing Sciences 50.
Introduction to the physics of sound as applicable to speech and hearing sciences; classification of different sounds; properties of sound; acoustics of tubes and its relationship to human speech sounds; psychophysics of hearing: pitch, intensity, loudness, and their measurement.

122. Anatomy, Physiology, and Neurology of the Speech Mechanism
(4) STAFF
Prerequisites: Speech and Hearing Sciences 50 and Zoology 25.
Recommended preparation: Zoology 25L.
Anatomical, physiological, and neurological bases for an understanding of speech communication.

128. Aural Anatomy and Pathology
(4) DANHAUER
Recommended preparation: Speech and Hearing Sciences 50.
Anatomy and physiology of the human auditory system; causes and types of hearing impairment; otological considerations; medical and surgical implications.

131. Assessment and Rehabilitation for Hearing-Impaired Adults
(4) DANHAUER
Recommended preparation: Speech and Hearing Sciences 50 and 128.
Introduction to psychoacoustic principles as applied to audiometric diagnostics and aural rehabilitatiion with adults.

133. Assessment and Habilitation for Hearing Impaired Children
(4) STAFF
Prerequisite: Speech and Hearing Sciences 128.
Anatomical, physiological, and behavioral development of the hearing impaired child; etiology, assessment, and habilitation of early onset deafness.

135. Amplification for the Hearing Impaired
(4) DANHAUER
Recommended preparation: Speech and Hearing Sciences 50, 128, and 131.
Covers methodology for rehabilitating persons with hearing loss; emphasizes recent developments in instrumentation and measurement techniques. Hearing aids and real-ear analysis are used with hands-on laboratory approach. Emphasizes interfacing amplification to the patient and family.

154. Assessment and Treatment of Child Language Disorders
(4) STAFF
Prerequisites: Speech and Hearing Sciences 50, 166, and Linguistics 137.
An introduction to the methods used in the identification and remediation of child language disorders. Assessment and treatment of morphologic, pragmatic, syntactic, and semantic disorders will be discussed.

155. Assessment and Treatment of Child Phonologic Disorders
(4) J. INGHAM
Prerequisites: Speech and Hearing Sciences 50, 120, 166, and Linguistics 137.
A study of principles and methods for assessing children's speech production to determine existence of phonologic disorders and a review of varieties of treatment methods for such disorders.

166. Principles of Behavior Modification
(4) R. INGHAM
Prerequisite: Psychology 1.
Basic principles of operant conditioning and their use in classroom, family, and clinical environments with special reference to speech-language pathology.

167. Introduction to Stuttering
(4) R. INGHAM
Prerequisites: Speech and Hearing Sciences 50 and 166.
Review and analysis of the features and characteristics of stuttering, the areas and causes of

stuttering, conditions that modify stuttering, and current therapies for stuttering.

182. Undergraduate Thesis
(4) STAFF
Prerequisite: consent of instructor.
Independent work with faculty sponsor culminating in senior thesis.

191. Practicum in Speech and Hearing Sciences
(1-5) STAFF
Prerequisite: consent of instructor.
May be repeated for a maximum of 5 units.
Provides faculty supervision for students participating in formal, practical research experiences. Written proposal required.

194. Group Studies for Advanced Students
(1-4) STAFF
Prerequisites: upper-division standing and consent of instructor.
May be repeated for a maximum of 6 units.
Selected topics in accordance with instructor's area of specialization.

197. Instructional Laboratory
(1-4) STAFF
Prerequisites: senior standing; consent of instructor.
Students must have a 3.0 grade-point average.
Tutoring experience for advanced undergraduate students in preparation for graduate education.

199. Independent Studies
(1-4) STAFF
Prerequisite: consent of instructor.

GRADUATE COURSES

200. Research Methods for Communication Disorders
(4) R. INGHAM
Prerequisite: consent of instructor.
This course will review the principal experimental and descriptive research designs applicable to group and single subject investigations of speech, language, and hearing disorders. Students will also be introduced to appropriate data analysis methods for these designs.

222. Auditory Pathology
(4) STAFF
Prerequisite: consent of instructor.
Diagnosis of hearing disorders viewed from the perspective of auditory organ pathology; conductive, cochlear, and retrocochlear disorders; pathological mechanisms and consequences.

223. Electrophysiologic Audiology
(4) STAFF
Prerequisite: consent of instructor.
Electrophysiology of hearing including acoustic, mechanical, and electrical events; measurement techniques including electrocochleography, single unit responses, and auditory evoked potentials; other physiologic measures of auditory function and a comparison of measures.

225. Impedance Audiometry
(4) STAFF
Prerequisite: consent of instructor.
Theoretical and procedural issues in assessing the auditory system via impedance audiometric techniques. Emphasis on contemporary research in the nonparticipatory evaluation of the ear involving immitance, tympanometry, and acoustic reflex measures.

226. Clinical Audiology
(4) DANHAUER
Prerequisite: consent of instructor.
Study of advanced audiologic diagnostic procedures and related research; advanced techniques and interpretation in pure tone audiometry; speech tests, special tests for determination of site of lesion, electrophysiologic audiometry and central auditory tests.

227A. Aural Rehabilitation
(4) DANHAUER
Prerequisite: consent of instructor.
Contemporary theoretical, methodological, and experimental approaches to understanding and improving communication of the hearing impaired. Evaluation of electroacoustic amplification systems for the hearing impaired are covered.

227B. Electroacoustic Assessment
(4) DANHAUER
Prerequisite: consent of instructor.
In-depth evaluation, recommendation, and fitting procedures for amplification devices for the hearing impaired. Emphasis on contemporary research in electroacoustic analysis of amplification systems.

230. Developmental Considerations in Phonological Disorders
(4) STAFF
Prerequisite: consent of instructor.
Description of disordered phonologic acquisition. Course will include a literature review for normal and disordered speech acquisition. Topics will include functional misarticulation, phonologic aspects of cleft palate, developmental apraxia, and dysarthria.

231. Assessment of Language
(4) STAFF
Issues and procedures for the assessment of the linguistic, cognitive, and social domains will be discussed. An emphasis on the "normal model" for the assessment of language disorders will be utilized.

232. Assessment and Intervention in Child Language
(4) STAFF
Prerequisite: consent of instructor.
Assessment and intervention issues in language will be explored. Intervention programs will be based on principles inherent to the normal and disordered language systems.

240. Disorders of Phonation
(4) STAFF
Prerequisite: consent of instructor.
Current methods of assessment and remediation of disorders of phonation in adults and children are examined. Normal voice production is reviewed, while pathological voice production is examined in detail.

242. Seminar in Stuttering
(4) R. INGHAM
Prerequisite: consent of instructor.
Identification and development of stuttering behavior in children and adults; procedures for description and measurement of such behaviors; special attention to the design of treatment programs incorporating various remediation approaches including behavior modification, counseling, group treatment.

243. Seminar in Child Phonology: Assessment and Treatment
(4) J. INGHAM
Prerequisite: consent of instructor.
A study of the experimental and clinical literature dealing with the measurement and treatment of phonological disorders in children. Theoretic and applied issues will be included.

248. Generalization and Maintenance
(4) STAFF
Prerequisite: consent of instructor.
Study of the theoretical, experimental, and clinical literature pertaining to the measurement and production of treatment gains across novel settings, behaviors, and time. Special attention to procedures readily usable in clinical settings.

251. Speech Perception
(4) STAFF
Prerequisite: Speech and Hearing Sciences 241.
An understanding of speech perception with emphasis on acoustic cues in speech perception, cues for manner, place and voicing; categorical versus continuous perception; methods in the study of, and theories of speech perception; speech perception by infants and animals; neurophysiology of speech perception.

258. Psychoacoustics
(4) DANHAUER
Prerequisite: consent of instructor.
Research methods in psychological and physiological acoustics; review of significant studies in frequency amplification and duration parameters; use of instrumentation.

259. Cochlear Prostheses
(4) DANHAUER
Prerequisite: consent of instructor.
This course covers the study of cochlear function, disorders, and remediation via prostheses and instrumentation with emphasis on electrical stimulation and cochlear implants. Test protocols and their application for assessing patients' speech perceptions abilities are also covered.

262. Theoretical Aspects of Language
(4) STAFF
Prerequisite: consent of instructor.
Linguistic, cognitive, and social theories of language will be presented as well as a critical analysis of the contribution made by the various theoretical positions. The application of language theories to the field of language remediation will be presented.

288. Within-Subject Experimental Research Designs
(4) J. INGHAM
Prerequisites: Speech and Hearing Sciences 200; consent of instructor.
Investigation of single-subject research designs, their internal and external validity and the kinds of questions to which they can be applied. Students will read and critique relevant research, make class presentations, and design a within-subject experiment.

290. Philosophy of Science and Communication Disorders
(4) STAFF
Prerequisite: consent of instructor.
The study of philosophy of science is presented as a description of what science is and as a model for what science ought to be. The course provides a formal structure from which our own science can be understood.

500. University Teaching in Communication Sciences and Disorders
(2) STAFF
Prerequisite: appointment as teaching assistant.
May be repeated for a maximum of 12 units. No unit credit allowed toward advanced degree.
Theory of teaching communication sciences and disorders at the college level. Topics include the preparation of behavioral objectives and course syllabi, construction of tests, and grading practices. Each quarter, student will enroll under direction of faculty for whom he or she is a teaching assistant.

501. Research Seminar: Communication Sciences and Disorders
(1) STAFF
Prerequisite: graduate standing in speech and hearing sciences.
Must be taken every quarter of graduate enrollment. No unit credit allowed toward advanced degree.
Discussion and criticism of current research activity.

S94. Special Topics
(1-4) STAFF
Prerequisite: consent of instructor.
May be repeated with a different topic for a maximum of 9 units.
Selected topics in accordance with instructors' specializations.

595. Group Studies
(3) STAFF
Prerequisite: consent of instructor.
May be repeated with a different topic for a maximum of 9 units.
Critical review of research organized on a topic basis in accordance with instructors' specializations.

596. Directed Reading and Research
(2-4) STAFF
Prerequisite: consent of instructor.
May be repeated for a maximum of 10 units.
Individual tutorial. A written proposal must be approved by the department chair.

597. Preparation for the Qualifying Examination
(1-4) STAFF
Prerequisite: consent of graduate advisor.
No unit credit allowed toward advanced degree.
Directed group or individual preparation for the master's or doctoral qualifying examination.

598. Master's Thesis Research and Preparation
(1-12) STAFF
Prerequisite: consent of thesis advisor.
No unit credit allowed toward advanced degree.
The thesis is done under the direction of the chair of a student's thesis committee.

599. Dissertation Preparation
(1-12) STAFF
Prerequisites: consent of instructor; advancement to candidacy.
This course is reserved for writing the dissertation.

Statistics and Applied Probability

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Alan T. Gous, Ph.D., Stanford University, Assistant Professor (statistical modeling)

David V. Hinkley, Ph.D., London University, Professor (statistical theory and methods)

John Hsu, Ph.D., University of Wisconsin, Associate Professor (Bayesian inference, linear models)

Sreenivasa R. Jammalamadaka, Ph.D., Indian Statistical Institute, Professor (mathematical statistics, nonparametric methods, directional data)

Ta-Hsin Li, Ph.D., University of Maryland, Associate Professor (time series, signal processing)

Wendy Meiring, Ph.D., University of Washington, Assistant Professor (applied statistics, statistics of space-time processes)

Svetlozar Rachev, D.Sc., Steklov Mathematical Institute, Professor (probability theory, stability, probability metrics, mathematical finance)

Yuedong Wang, Ph.D., University of Wisconsin at Madison, Associate Professor (biostatistics, smoothing splines)

Emeriti Faculty

Joseph Gani, Ph.D., Australian National University, D.Sc., University of London, Professor Emeritus (applied probability, biomathematics, stochastic processes)

James B. Robertson, Ph.D., Indiana University, Professor Emeritus (probability, ergodic theory, stochastic processes)

Milton Sobel, Ph.D., Columbia University, Professor Emeritus (ranking and selection, mathematical statistics)

Undergraduate Program

Statistics is basic to quantitative research in the biological, physical, and social sciences. Because its methods are based on mathematics, it requires a firm understanding of mathematical methods as well as an appreciation of scientific method, computation, and practical problems.

As preparation for entry into any of UCSB's undergraduate statistics programs, students should have completed two years of algebra and courses in plane geometry and trigonometry in high school. In the first two years of university study, students should complete the preparation requirements outlined below. These include ten courses, many of which are sequential. Thus students should begin satisfying these requirements in the first quarter of the freshman year. At the end of the second year, students should decide which of the undergraduate degrees described below is best suited to their needs and should design an upper-division program in consultation with their faculty advisor. Recommended programs for each emphasis are available from the faculty advisor.

Bachelor of Arts—Statistical Science

The B.A. in statistical science is a basic degree intended for students interested in general training in statistics and the use of statistical methods in the social and decision sciences. It is suitable as a terminal baccalaureate degree, or as preparation for advanced training in business administration, management science, or operations research.

Preparation for the major. Mathematics 3A-B-C, 5A-B-C, 8. Two courses on different computer languages, one from Computer Science 5FO, 5JA, 10 (to be taken for a letter grade) and one from Computer Science 11FO, 11JA, 12 (to be taken with P/NP grading option).

Upper-division requirements. Forty upper-division units in statistics and mathematics are required, excluding PSTAT 133A-B-C, and Mathematics 100A-B, 101A-B, 102A-B, 193. The 40 units must include PSTAT 120A-B-C, a minimum of 16 units from PSTAT 105, 122, 123, 126, 130, 134, 140, 160A-B, 174, 175 and a minimum of 8 units from Mathematics 104A-B-C, 108A-B, 132A-B, and 4 units of upper-division elective coursework. (With an advisor's approval, 4 of the 40 units may be courses in subjects other than statistics or mathematics, taken as part of a coherent statistics program.)

Bachelor of Science—Statistical Science

The B.S. in statistical science is a specialized statistics degree intended for students interested in the use of statistical theory and methods in the biological, physical, and technological sciences. It is suitable as a terminal baccalaureate degree, or as preparation for advanced training in actuarial statistics, applied statistics, or probability and statistics.

The B.S. in statistical science offers three possible areas of concentration: actuarial statistics, applied statistics, and probability and statistics. Completion of one of these concentrations will not be formally acknowledged on the student's official transcript or diploma.

Preparation for the major. Mathematics 3A-B-C, 5A-B-C, 8. Two courses on different computer languages, one from Computer Science 5FO, 5JA, 10 (to be taken for a letter grade) and one from Computer Science 11FO, 11JA, 12 (to be taken with P/NP grading option).

Upper-division requirements. Fifty-two upper-division units in statistics and mathematics are required, excluding PSTAT 133A-B-C and Mathematics 100A-B, 101A-B, 102A-B, 193. The 52 units must include PSTAT 120A-B-C, 122, 126; 8 units from PSTAT or Mathematics 104A-B-C, 108A-B, 111A-B-C, 117, 118A-B-C, 132A-B, Economics 100A-B or 104A-B, 134A-B (an entire sequence is strongly recommended). Students must also complete one of the following concentrations:

Actuarial statistics concentration. Twelve units from PSTAT 171, 172A-B, 173, and 12 elective units of upper-division statistical courses.

Applied statistics concentration. PSTAT 130; 8 units from PSTAT 123, 140, 174, 175; 12 units of upper-division elective statistical courses. Up to 4 of the elective statistical units required may be chosen from courses in related departments, if approved by the major advisor as part of a coherent statistics program.

Probability and statistics concentration. PSTAT 160A-B is required, with 16 elective units of upper-division statistical courses. Up to 4 of the elective statistical units required may be chosen from courses in related departments, if approved by the major advisor as part of a coherent statistics program.

Minor—Statistical Science

All courses to be applied to the minor must be completed on a letter-grade basis. This includes both courses offered in probability and statistics and those offered by other departments and applied to the minor.

Preparation for the minor. Mathematics 3A-B-C (12 units), 5A-B and 8 (12 units). *Note: Physics 1 or 6A is prerequisite to Math 5A.*

Upper-division minor. Twenty units, distributed as follows: PSTAT 120A, 120B-C or 160A-B; 8 units of upper-division PSTAT electives (up to 4 of the elective units may be in a related department, subject to the approval of the statistics and applied probability undergraduate advisor.) *Note, however, that the following courses are not applicable to the minor. PSTAT 133A-B-C.*

Note: Substitutions and waivers are subject to approval by the chair or advisor of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

Four programs are available: M.A. in Statistics—Mathematical Statistics Specialization, M.A. in Statistics—Applied Statistics Specialization, M.A. in Statistics—Operations Research Specialization, and Ph.D. in Statistics and Applied Probability. Specializations are not, however, listed on transcripts or diplomas.

In addition to departmental requirements, candidates for graduate degrees must meet the university degree requirements described in the chapter "Graduate Education at UCSB."

In addition to departmental admission requirements, applicants must also meet the university requirements for admission described in the chapter "Graduate Education at UCSB."

All courses required for the graduate degrees must be completed with a grade of B or better.

The Statistical Laboratory

The Statistical Laboratory (Statlab) has been providing UCSB graduate students and faculty with statistical consulting advice since 1981. The Department of Statistics and Applied Probability is endeavoring to expand the activities of the laboratory and to establish it as a source point for statistical expertise on campus, organizing cross-disciplinary seminars on applied statistics and offering services related to statistical computing and data analysis. The Statlab offers graduate students practical experience in statistical consulting while providing the UCSB campus with professional statistical services. The Statlab may be reached at (805) 893-2007.

Master of Arts—Statistics—Mathematical Statistics Specialization

Admission

A candidate for admission must fulfill the academic requirements for graduate study and have had undergraduate coursework in linear algebra and analysis. Students who do not have credit for PSTAT 120A-B-C, or an equivalent course, will be required to take it as a prerequisite for required graduate courses in the program. It is also desirable for students to have had some undergraduate work in applied mathematics and/or applied statistics. In addition, students must have some basic capability in programming in a modern computer language. When necessary, supplemental undergraduate courses may be required; they will not count toward the 42-unit course requirement described below.

Degree Requirements

Candidates must complete 42 units of approved upper-division or graduate work, including any two of the four basic graduate course sequences in statistics and probability: PSTAT 207A-B-C, 208A-B-C, 213A-B-C, and 220A-B-C.

Two plans are available for completing the degree: Plan 1 (thesis), and Plan 2 (examination). Candidates in both plans must complete 42 units of approved upper-division or graduate work.

Under Plan 1, students must pass a comprehensive examination in one statistics area requirement, described under the heading "Doctor of Philosophy" below, prepare an acceptable thesis under the supervision of a faculty member, and defend it before a faculty committee. A maximum of 6 of the 42 units may be in PSTAT 596.

Under Plan 2, students must pass a comprehensive examination in two statistics area requirements.

Master of Arts—Statistics—Applied Statistics Specialization

Admission

A candidate for admission must fulfill the scholarship requirements for graduate study and have had undergraduate coursework equivalent to PSTAT 120A-B-C and a basic computer science course at the level of Computer Science 10 and 11FO. Students may be admitted who do not satisfy all requirements, but they will be asked to take supplementary undergraduate courses which will not count toward the 42-unit course requirement described below.

Degree Requirements

The requirements for the applied statistics track will be kept flexible so that joint programs of study with other departments and schools can be worked out to suit the needs of individual students. These individualized programs should form a coherent plan and are subject to the approval of the statistics faculty. Courses that have substantial overlap will not be allowed.

Candidates must complete 42 units of upper-division or graduate work approved by the graduate advisor in statistics. At least 24 of these units must be at the graduate level. They must include PSTAT 122 and 220A-B-C and at least 4 but no more than 8 units of 230. The remaining 18 to 22 units of credit may be obtained by taking any upper-division or graduate courses from the Statistics and Applied Probability listing, excluding 107, 120A-B-C and 133A-B-C, or any of the approved courses from the other applied disciplines. The graduate advisor can supply a list of approved courses.

Students must submit a project report on a statistical application to the Director of the Statistical Laboratory and must pass a comprehensive written examination based on PSTAT 120A-B-C, 122, 126, and 220A-B-C.

Master of Arts—Statistics—Operations Research Specialization

Admission

A candidate for admission must fulfill the scholarship requirements for graduate study and have had undergraduate coursework equivalent to PSTAT 120A-B-C and a basic computer science course at the level of Computer Science 10 and 11FO. Students may be admitted who do not satisfy all requirements, but they will be asked to take supplementary courses which will not count toward the 42-unit requirement described below.

Degree Requirements

The requirements for the operations research track will be kept flexible so that joint programs of study with the departments of computer science, economics, electrical and computer engineering, geography, and mathematics can be worked out to suit the needs of individual students. These individualized programs should form a coherent plan with a major and a minor field of study, and are subject to the approval of the faculty. Courses with a substantial overlap will not be allowed.

Candidates must complete 42 units of upper-division or graduate work approved by the graduate advisor in statistics. At least 24 of these units must be at the graduate level. They must include PSTAT 208A-B-C and at least 2, but not more than 4, units of PSTAT 209. The remaining seven courses may be drawn from current offerings in the five departments named above and in the Statistics Program. They should consist of at least four courses in a major field (no more than two in the upper division) and at least two in a minor field (no more than one in the upper division). Full details of these courses are provided in the booklet *Graduate Study in Statistics and Applied Probability*, available from the graduate advisor.

Students must plan a comprehensive written examination based on Mathematics 132A-B, PSTAT 120A-B-C, and PSTAT 208A-B-C, in addition to an examination in the major field of the student's choice. Students who receive borderline grades on this examination will be asked to take a subsequent oral examination.

Doctor of Philosophy—Statistics and Applied Probability

Degree Requirements

Area requirements. Ph.D. students in statistics will be required to fulfill two area requirements. Suggested courses in preparation for these examinations are available from the graduate advisor. Students are also required to be proficient in linear algebra at least to the level of Mathematics 108A-B and will be advised to take this course if deficient.

Course requirements. Students must pass 72 units of graduate courses in statistics with grades of at least a B or S in each course. The 72 units must include PSTAT 207A-B-C, 213A-B-C, and 220A-B-C. Graduate courses in statistics from other departments may be included, but should have prior approval from the graduate advisor in statistics and/or the thesis advisor. These advanced courses should form a coherent plan and facilitate the selection of an area for dissertation research.

The student advances to candidacy after satisfactorily completing two written examinations and the oral qualifying examination. The student is required to complete a dissertation representing an original contribution to knowledge; the thesis is defended before a faculty committee.

An emphasis in quantitative methods in the social sciences is also available, with its own requirements; see the Web site at www.qmss.psych.ucsb.edu.

Specific details about degree requirements are found in the departmental graduate guide. Departmental requirements stated there are in addition to the minium university requirements stated in the *General Catalog*.

Optional Ph.D. Emphasis in Quantitative Methods in the Social Sciences

Students pursuing a Ph.D. in Statistics and Applied Probability may petition to add an

interdisciplinary emphasis in Quantitative Methods in the Social Sciences (QMSS). This interdisciplinary emphasis involves faculty from the Ph.D. programs in Communication, Economics, Education, Geography, Political Science, Psychology, Sociology, and Statistics and Applied Probability. Each student admitted to the QMSS emphasis will develop, with her or his advisor, an individual contract listing the QMSS requirements to be completed.

Statistics and Applied Probability Courses

LOWER DIVISION

SA. Statistics
(5) STAFF

Not open for credit to students who have completed PSTAT 5E, 5S, Economics 5, Psychology 5, Sociology 3, EEMB 30, Communications 87, or other introductory statistics..

Recommended preparation: high school algebra.

Random variables, sampling distribution, estimation hypothesis testing, correlation and regression, other topics from statistics.

SE. Statistics with Economics and Business Applications
(5) STAFF

Not open for credit to students who have completed PSTAT 5A, 5S, Economics 5, Psychology 5, Sociology 3, EEMB 30, Communications 87, or other introductory statistics.

Recommended preparation: high school algebra.

An introduction to elementary statistical methods applied to the analysis of economic data. Topics include basic probability theory, statistical inference and hypothesis testing, and regression.

6H. Introductory Statistics (Honors Section)
(1) STAFF

Prerequisite: consent of instructor.

Recommended preparation: PSTAT 5AA-ZZ and 4 prior courses in statistics.

Descriptive methods, histograms, measures of central tendency and spread, probability, random variables, mean and variance, binomial and normal distributions, estimating with random confidence, tests of significance, inference for means and proportions, regression and confidence test of significance.

94. Group Studies in Statistics
(1) STAFF

Prerequisite: consent of instructor.

Lectures and discussions on special topics.

UPPER DIVISION

10S. Introduction to Nonparametric Methods
(4) STAFF

Prerequisite: PSTAT 5A or 5E or 5S.

An applied statistics course examining modern, practical (distribution-free) significance tests: permutation tests, sign tests, ranking methods. This course does not require calculus, and is designed for students in engineering, the physical, biological, and social sciences, and mathematics.

120A. Probability and Statistics
(4) STAFF

Prerequisite: Mathematics 5B.

Concepts of probability; random variables; combinatorial probability; discrete and continuous distributions; joint distributions, expected values; moment generating functions; law of large numbers and central limit theorems.

120B. Probability and Statistics
(4) STAFF

Prerequisites: a grade of C or better in PSTAT 120A.

Distribution of sample mean and sample variance; *t*, x^2 and *F* distributions; summarizing data by statistics and graphs; estimation theory for single samples: sufficiency, efficiency, consistency, method of moments, maximum likelihood; hypothesis testing: likelihood ratio, goodness of fit tests; confidence intervals.

120C. Probability and Statistics
(4) STAFF

Prerequisites: a grade of C or better in PSTAT 120B.

Two-sample comparisons: t-test for means of independent samples, paired t-test; analysis of variance: one- and two-way models; analysis of categorical data using chi-squared tests; linear regression via least squares method.

122. Design and Analysis of Experiments
(4) STAFF

Prerequisite: PSTAT 120A.

Linear models; least squares theory; one-way and two-way analysis of variance; multiple comparison procedures; fixed, random, and mixed effects models; basic designs including completely randomized design, randomized blocks design, incomplete block designs, latin squares, factorial and fractional factorial designs; analysis of covariance.

123. Sampling Techniques
(4) STAFF

Prerequisite: a prior upper-division PSTAT course.

An elementary development of the statistical methods used to design and analyze sample surveys. Basic ideas: estimates, bias, variance, sampling and nonsampling errors; simple random sampling with and without replacement, ratio and regression estimates; stratified sampling; systematic sampling; cluster sampling; sampling with unequal probabilities, multistage sampling. Examples from various fields will be discussed to illustrate the concepts including sampling of biological populations, opinion polls, etc.

126. Regression Analysis
(4) STAFF

Prerequisites: PSTAT 120A-B.

Linear and multiple regression, analysis of residuals, variable and model selection including stepwise regression, and analysis of covariance. Other topics may include logistic regression, probit analysis, nonlinear regression and nonparametric regression, and correlation methods.

130. Statistical Computing
(4) STAFF

Prerequisite: PSTAT 120B or 133B.

Survey of major computer packages available for statistical analysis, including SAS, S-Plus, SPSS, Minitab. Discussion of the uses of these packages in practical statistical analysis, using applications in various sciences.

132C. Introduction to Operations Research
(4) STAFF

Prerequisites: Mathematics 132A-B; and, PSTAT 120A or Economics 141A.

Same course as Mathematics 132C.

Review of probability; queuing theory; waiting models; birth and death processes; applications; inventive theory; Markov chains, applications, and decision models; computer simulation; component and system reliability; decision analysis; list and area searching.

133A-B-C. Introduction to Statistical Methods
(4-4-4) STAFF

Not open to mathematics and statistics majors. Students who have had PSTAT 5AA-ZZ or equivalent cannot receive credit for PSTAT 133A, but may be admitted into PSTAT 133B or 133C with the consent of instructor.

Recommended preparation: Students who plan to take PSTAT 133B-C should enroll in PSTAT 133A.

Basics of probability and statistics; minimum use of calculus; use of statistical packages. Topics: probability, random variables, expectation, variance, binomial, normal, and other distributions. Statistical inference, estimation and confidence intervals, testing, simple and multivariate regression, analysis of variance, non-parametric inference.

140. Statistics in Industry
(4) STAFF

Prerequisite: PSTAT 120A or 133A.

Review of basic probability distributions and concepts in estimation and testing hypotheses, statistical quality control charts for the mean, standard deviation, the range, the fraction defective, and number of defects; sampling by attributes and variables; acceptance sampling, single, double, and multiple sampling plans, choice of acceptable quality level, average outgoing quality limit and lot tolerance percent defective values; Dodge-Romig and Mil-Std 105 plans; some aspects of life testing and reliability.

160A-B. Applied Stochastic Processes
(4-4) STAFF

Prerequisites: Mathematics 108A and PSTAT 120A: PSTAT 160A is prerequistite to PSTAT 160B.

Random walks, Markov chains, Poisson processes, Markov processes; second order processes, Wiener process stochastic differential equations, optimal prediction, spectral distributions; queueing theory. Stochastic processes in reliability, stochastic models for time series.

171. Mathematics of Compound Interest
(4) STAFF

Prerequisites: Mathematics 3A-B.

Not open for credit to students who have completed PSTAT 182A.

Introduction to compound interest. Topics include: measurement of interest, annuities certain, varying annuities, amortization schedules, sinking funds, bonds and related securities, depreciation.

172A. Actuarial Statistics I
(4) STAFF

Prerequisites: PSTAT 120A and 171.

Probabilistic and deterministic contingency mathematics in life and health insurance, annuities, and pensions. Topics include: survival distributions and life tables, life insurance, life annuities, net premiums, net premium reserves.

172B. Actuarial Statistics II
(4) STAFF

Prerequisite: PSTAT 172A.

Net premium reserves, multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends.

173. Risk Theory
(4) STAFF

Prerequisite: PSTAT 120A.

Utility theory and the economics of insurance, individual risk models for a short term, collective risk models for a single period and for an extended period, applications.

174. Time Series
(4) STAFF

Prerequisites: PSTAT 120A-B.

Time series models: stationary and non-stationary models, seasonal time series, ARMA models: stationary, causality, calculation of ACF, PACF, Mean and ACF estimation. Barlett's formula, Model estimation: Yule-Walker estimates, ML method. Identification techniques, diagnostic checking, forecasting, spectral analysis, the periodogram.

175. Survival Analysis
(4) STAFF

Prerequisite: PSTAT 120A-B.

Properties of survival models, including both parametric and tabular models; methods of estimating them from both complete and incomplete samples, including the actuarial, moment and maximum likelihood estimation techniques, and the estimation of life tables from general population data.

182T. Tutorial in Actuarial Statistics
(1) STAFF

Prerequisites: upper-division standing and consent of instructor.

May be repeated for credit to a maximum of 3 units.

Problem solving sessions to prepare students for the first four actuarial examinations. Topics corresponding to these examinations (general mathematics, mathematical statistics, applied statistics and mathematics, and actuarial mathematics) will be offered in different quarters.

190AA-ZZ. Special Topics in Statistics
(4) STAFF

Prerequisite: upper-division standing.

May be repeated up to 12 units provided letter designation is different. Only 8 units of credit allowed for the major.

Information about the special topics to be presented may be obtained from the office of the Statistics and Applied Probability Department.

193. Internship in Statistics
(1-4) STAFF

Prerequisites: upper-division standing; consent of instructor.

Limited to no more than 4 units total. Credit will not be given toward upper-division mathematics major requirements.

Faculty sponsored academic internship in industrial or research firms.

195. Special Topics in Statistics
(1-4) STAFF

Prerequisites: upper-division standing in statistics; consent of instructor.

Special topics of current importance in statistical sciences. Course content will vary.

199. Independent Studies in Statistics
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in statistics.

Students must have a minimum grade-point average of 3.0 for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

199RA. Independent Research Assistance
(1-4) STAFF

Prerequisites: PSTAT 120A-B-C; a prior upper-division course in Probability and Statistics; upper-division standing; consent of instructor and department.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

Students enrolling in graduate courses will be expected to have completed PSTAT 120A-B-C or equivalents.

207A-B-C. Statistical Theory
(4-4-4) STAFF

Prerequisites: PSTAT 120A-B-C.

Univariate and multivariate distribution theory; generating functions; inequalities in statistics; order statistics, estimation theory; likelihood, sufficiency, efficiency, maximum likelihood; testing hypotheses: likelihood ratio and score tests, power; confidence and prediction intervals; Bayesian estimation and hypothesis testing; basic decision theory; linear regression; analysis of variance.

208A. Principles of Programming for Operations Research
(4) STAFF

Prerequisites: Mathematics 132A-B.

Theory and computational techniques of linear programming. Duality theory and simplex methods. Network flow problems and algorithmic methods. Introduction to integer and nonlinear programming.

208B. Stochastic Models for Operations Research
(4) STAFF

Prerequisites: PSTAT 160A-B.

Principles of stochastic modeling. Queueing theory, the analysis of simple single-server queues, congestion theory. Inventory and storage models, inventory control. Markov decision processes.

208C. Statistical Methods for Operations Research
(4) STAFF

Prerequisites: PSTAT 120A-B and PSTAT 126.

Quality control, acceptance sampling plans and acceptance procedures. Reliability theory and survival analysis. Introduction to time series analysis, ARMA models. Spectral analysis.

209. Case Studies Project for Operations Research
(2-4) STAFF

Prerequisite: students must have completed at least 28 units toward their master's degree.

Real life problems will be analyzed by standard operations research methods. A model will be formulated, and relevant data collected and analyzed mathematically and computationally. A written report on the project must be submitted to complete the master's requirements.

210. Measure Theory for Probability
(4) STAFF

Prerequisite: PSTAT 120A.

Probability spaces: axioms, σ-algebras, monotone class theorems, construction of probability measures on measurable spaces. Random variables. Expectations (integral Lebesque). Hilbert space of random variables with finite second moment.

213A-B-C. Introduction to Probability Theory and Stochastic Processes
(4-4-4) STAFF

Prerequisites: PSTAT 120 A-B-C.

Recommended preparation: Mathematics 118A-B-C.

Foundations of probability, measure theory, distribution functions, characteristic functions, weak and strong laws of large numbers, weak convergence, central limit theorems, martingales, Markov processes, Brownian motion, introduction to stochastic calculus and stochastic control theory.

215A-B-C. Statistical Decision Theory
(4-4-4) STAFF

Prerequisites: PSTAT 120A-B-C and consent of instructor.

A basic introductory mathematical statistics course in which statistical concepts and procedures are developed and examined from the point of view of game theory, optimization, and decision theory.

216A-B-C. Multivariate Analysis
(4-4-4) STAFF

Prerequisites: PSTAT 120A-B-C and Mathematics 108A-B.

Statistical theory associated with the multivariate normal, Wishart and related distributions, partial and multiple correlation, principal components. Hotelling's T2-statistic, multivariate linear models, classification and discriminant analysis. Other topics may include invariance, admissibility, minimax, James-Stein estimates, multivariate probability inequalities, majorization, and Schur functions.

217A-B-C. Design of Experiments
(4-4-4) STAFF

Prerequisites: PSTAT 120A-B-C and Mathematics 108A-B.

Linear models and the analysis of variance; regression and least squares theory; contingency table analysis; method of steepest ascent; ridge regression.

219. Statistics of Life Testing and Reliability
(4) STAFF

Prerequisites: PSTAT 120A-B-C and 160A-B.

Will discuss probability failure models and associated test procedures. Topics will include: parametric and nonparametric life-testing procedures, estimation of hazard rates, component and system reliability, maintenance policies, and renewal theory.

220A-B-C. Advanced Statistical Methods
(4-4-4) STAFF

Prerequisites: PSTAT 120A-B-C for 220A; PSTAT 120A-B-C and 220A for 220B-C.

General linear models; regression; ANOVA with missing observations; analysis of covariance; multivariate statistical methods; classification and discrimination; clustering and multidimensional scaling, categorical data analysis and loglinear models; model selection and validation, robust fits, inspection of residuals, bio-assay, survival curves.

221A-B-C. Advanced Probability Theory
(4-4-4) STAFF

Prerequisites: PSTAT 213A-B-C.

Infinitely divisible distributions, renewal theorems, extreme value theory, convergence of laws on separable metric spaces, theory of probability metrics, stability of stochastic models, probabilistic methods in engineering and finance.

222A-B-C. Advanced Stochastic Processes
(4-4-4) STAFF

Prerequisites: PSTAT 213A-B-C.

Point processes, Markov processes with discrete and continuous parameters, martingales, stationary processes, Brownian motion, diffusion theory, potential theory, stochastic differential equations.

223A-B-C. Financial Modeling—An Engineering Approach
(4-4-4) STAFF

Prerequisites: PSTAT 213A-B-C.

An introduction to stochastic models in finance. Stochastic models and applications to price determination for stocks, bonds, derivative securities, interest rate term structure. Portfolio issues, hedging, risk management and financial engineering. Numerical methods and computation.

230. Seminar and Projects in Statistical Consulting
(4-8) STAFF

Prerequisites: PSTAT 220A-B-C (may be taken concurrently).

Students participate in the discussions and consulting projects in the statistical laboratory. They are assigned project(s) to work on, and write a report on statistical aspects of the project.

233A-B-C. Introduction to Statistical Methods
(4-4-4) STAFF

Not open to mathematics majors.

Statistical data analysis using S-Plus and SAS, minimum use of calculus. Exploratory data analysis, probability, significance tests and confidence intervals for means and variances. Correlation, multiple and nonlinear regression. Experimental designs, analysis of variance, contrasts. Nonparametric methods. Logistic and loglinear regression. Multivariate data methods. Spatial and temporal correlation.

262AA-ZZ. Seminars in Probability and Statistics
(1-6) STAFF

Prerequisites: PSTAT 120A-B-C; consent of instructor.

May be repeated for credit.

Topics of current research interest in probability and/or statistics, by means of lectures and informal conferences with members of staff.

274. Time Series
(4) STAFF

Prerequisites: PSTAT 120A-B.

Time series models: stationary and non-stationary models, seasonal time series, ARMA models: stationary, causality, calculation of ACF, PACF, Mean and ACF estimation. Bartlett's formula, Model estimation: Yule-Walker estimates, ML method. Identification techniques, diagnostic checking, forecasting, spectral analysis, the periodgram.

275. Survival Analysis
(4) STAFF

Prerequisites: PSTAT 120A-B.

Properties of survival models, including both parametric and tabular models; methods of estimating them from both complete and incomplete samples, including the actuarial, moment and maximum likelihood estimation techniques, and the estimation of life tables from general population data.

500. Teaching Assistant Practicum
(1-4) STAFF

Prerequisite: appointment as teaching assistant.

No unit credit allowed toward advanced degree.
Supervised teaching of undergraduate probability and statistics courses.

501. Teaching Assistant Training
(1-2) STAFF
Prerequisite: appointment as teaching assistant.
No unit credit allowed toward advanced degree.
Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

502. Teaching Associate Practicum
(1-5) STAFF
Prerequisite: appointment as associate.
No unit credit allowed toward advanced degree.
Supervised teaching of undergraduate courses.

510. Readings for Area Examinations
(2-6) STAFF
Prerequisite: enrollment in M.A. or Ph.D. program.

596AA-ZZ. Directed Reading and Research
(1-6) STAFF
Prerequisites: graduate standing and consent of instructor.
May be repeated for credit as determined by the department chair up to half the graduate units required for the M.A. degree.

598AA-ZZ. Master's Thesis Research and Preparation
(1-6) STAFF
Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

599AA-ZZ. Ph.D. Dissertation Preparation
(1-6) STAFF
Prerequisites: graduate standing and consent of instructor. Maximum of 12 units total.

Women, Culture, and Development Studies

Global and International Studies Program,
Office of the Provost,
Humanities and Social Sciences 3042;
Telephone (805) 893-7860
E-mail: gisp@alishaw.ucsb.edu
Web site: www.gisp.ucsb.edu/wdc.htm
Program Chair: Kum-Kum Bhavnani

Women, Culture, and Development Studies Advisory Committee

Ralph Armbruster-Sandoval, Ph.D. (Chicano Studies)
Edwina Barvosa-Carter, Ph.D. (Chicano Studies)
Kum-Kum Bhavnani, Ph.D. (Sociology)
Kathleen Bruhn, Ph.D. (Political Science)
Martha Davis, Ph.D. (Black Studies)
John Foran, Ph.D. (Sociology)
Nancy E. Gallagher, Ph.D. (History)
Mary Hancock, Ph.D. (Anthropology)
Barbara Harthorn, Ph.D. (Anthropology)
Mary Jacob, Ph.D. (Office of International Students and Scholars)
Chris McAuley, Ph.D. (Black Studies)
Stephen Miescher, Ph.D. (History)
Oyeronke Oyewumi, Ph.D. (Black Studies)
Susan Stonich, Ph.D. (Anthropology)
Mayfair Yang, Ph.D. (Anthropology)

Women, Culture, and Development (WCD) Studies is an affiliated program of UCSB's Global and International Studies Program. The WCD program offers an academic minor in women, culture, and development studies. This minor presents undergraduate students with a unique opportunity to focus their studies on the role of women in Third World development. Courses comprising the minor give the program wide geographic coverage, including the regions and countries of Africa, Asia, Latin America, and the Middle East. The minor allows students to explore how gender affects and is affected by development and the ways in which the cultures of peoples in the Third World affect the origins and outcomes of development.

The WCD minor program is highly interdisciplinary. Students completing the minor take two required seminars, Global Studies 180A-B (same courses as Sociology 156A-B). The minor's remaining 16 upper-division units are chosen from a list of almost 100 courses based in 15 departments. Students enrolling in the WCD minor will be assigned a faculty advisor who will assist them in course selection.

Minor—Women, Culture, and Development

All courses to be applied to the minor must be completed on a letter-grade basis.

Preparation for the minor. There are no required courses in preparation for the minor.

Upper-division minor. Twenty- four units, distributed in the following manner: Global Studies 180A and 180B (same as Sociology 156A and 156B); one course selected from Anthropology 103, 120, 122, 125, 130B, 146, 149, 172, 173, 185; Black Studies 104, 134, 161, 169AR; Chicano Studies 139, 152, 177, 178A, 189C; Film Studies 161; History 101G, 148, 179A-B; Global Peace and Security 136, 137; Music 168E; Political Science 147; Religious Studies 102, 114B-C; Sociology 118R, 130, 134R, 166W, 185G, 185K; Asian American Studies 113, 131, 132, 135, 136; and three additional courses selected from any of the following: ***Africa:*** Anthropology 156; Black Studies 100, 130A-B, 131, 133, 152, 171; French 192X; History 144, 147A, 147B, 147G; Music 175C; ***Asia:*** Anthropology 126, 138A-B, 142, 142B, 177; Chinese 141; History 185A-B; Korean 113, 120; Music 175E, 175G-H; Religious Studies 160, 166B, 178; Sociology 130CS, 130SA; ***Latin America:*** Anthropology 104H; History 151W, 154LA, 154LB, 156A-B, 156I, 158A-B; History of Art and Architecture 124B, 124L; Latin American and Iberian Studies 101; Music 175A; Political Science 148A-B; Sociology 130LA; Spanish 120A-B, 127, 177, 178, 180, 185, 194; Portuguese 128AA-ZZ; ***Middle East:*** History 142, 146A-B, 146W; Music 168X, 175F; Political Science 150A; Religious Studies 140B, 140D, 140F; Sociology 130ME.

Note: Substitutions and waivers are subject to approval by the chair or advisor of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Women's Studies

Women's Studies Program,
Division of Social Sciences,
South Hall 4706;
Telephone (805) 893-4330
E-mail: gunderse@sscf.ucsb.edu
Web site: www.womst.ucsb.edu
Program Chair: Jacqueline Bobo

Faculty

Jacqueline Bobo, Ph.D., University of Oregon, Associate Professor (film/television, cultural studies, race and cultural productions)

Shirley Geok-Lin Lim, Ph.D., Brandeis University, Professor (Asian-American literature, post-colonial literature, ethnic and feminist writing)

Laura M. Oaks, Ph.D., Johns Hopkins University, Assistant Professor (feminist theory; reproductive politics; anthropology of health, medicine, and science)

Juliet Williams, Ph.D., Cornell University, Assistant Professor (public law, political theory and feminist jurisprudence)

Emeriti Faculty

Ursula R. Mahlendorf, Ph.D., Brown University, Professor Emerita

Affiliated Faculty

Edwina Barvosa-Carter, Ph.D. (Chicano Studies)
Ann Bermingham, Ph.D. (History of Art and Architecture)
Kum-Kum Bhavnani, Ph.D. (Sociology)
Maurizia Boscagli, Ph.D. (English)
Julie Carlson, Ph.D. (English)
Sarah Cline, Ph.D. (History)
Patricia Cline Cohen, Ph.D. (History)
Catherine Cole, Ph.D. (Dramatic Art and Dance)
Sharon A. Farmer, Ph.D. (History)
Sarah Fenstermaker, Ph.D. (Sociology)
Louise Fradenberg, Ph.D. (English)
Nancy E. Gallagher, Ph.D. (History)
Avery Gordon, Ph.D. (Sociology)
Mary Hancock, Ph.D. (Anthropology)
Susan Koshy, Ph.D. (Asian American Studies)
Stephan Miescher, Ph.D. (History)
Catherine Nesci, Agrégation, École Normale Supérieure (French and Italian)
Christopher Newfield, Ph.D. (English)
Oyeronke Oyewumi, Ph.D. (Black Studies)
Lisa Parks, Ph.D. (Film Studies)
Constance Penley, Ph.D. (Film Studies)

Ann Plane, Ph.D. (History)
Erika Rappaport, Ph.D. (History)
Chela Sandoval, Ph.D. (Chicano Studies)
Beth Schneider, Ph.D. (Sociology)
Denise Segura, Ph.D. (Sociology)
Abigail Solomon-Godeau, Ph.D. (History of Art and Architecture)
Ines Talamantez, Ph.D. (Religious Studies)
Janet Walker, Ph.D. (Film Studies)
Mayfair Yang, Ph.D. (Anthropology)
Xiaojian Zhao, Ph.D. (Asian American Studies)

Women's Studies Advisory Committee

The Women's Studies Advisory Committee includes all of the above-listed faculty and affiliated faculty.

Women's studies is an interdisciplinary program and major in which the varied experiences of women and the systematic study of gender may be explored. The women's studies major is designed to provide the student with the opportunity to discover the variety and richness of women's historical, cultural, and social contributions, as well as to obtain a clear understanding of the dynamics of gender, race, and class inequality as it has been experienced and struggled against by the world's women. The student seeking a B.A. in women's studies will organize a coherent program of study around either a humanities or social science emphasis. The women's studies curriculum is composed of its own core courses as well as a variety of courses elected from disciplines within the humanities and social sciences.

The women's studies curriculum is designed to complement and elaborate the aims students pursue in traditional departments. The major can form the core of an excellent liberal arts education. It can also be used as preparation for careers in management, law, social service, the arts, publishing, and teaching, and as preparation for graduate study in the social sciences, humanities, and women's studies.

Students with a bachelor's degree in women's studies who are interested in pursuing a California Teaching Credential should contact the credential advisor in the Graduate School of Education as soon as possible.

Incoming students and prospective majors are invited to consult the women's studies faculty and staff advisors. Further descriptions of the women's studies curriculum and of major requirements are available in the program office. A list of courses offered is available each quarter, prior to registration.

Honors Program

Women's Studies has an honors program which will allow motivated undergraduates to undertake advanced research with a Women's Studies faculty member. The honors program requirements involve two quarters of independent study and a final presentation of research at a symposium in the spring. Upon successful completion of the program, students will graduate with "Distinction in the Major."

Undergraduate Program

All courses to be applied to the major and the minor must be completed on a letter-grade basis, including courses offered in women's studies and those offered by other departments and applied to the major/minor.

Bachelor of Arts—Women's Studies

Preparation for the major. Twelve units in lower-division courses are required. Students select 12 units from course offerings in areas A, B, and C.

Area A: Concepts in Women's Studies. One course required, selected from Women's Studies 10 and 20.
Area B: U.S. Feminisms. One course required, selected from Women's Studies 40 and 60.
Area C: Women, Nationalism and Transnationalism. One course required, selected from Women's Studies 30 and 70.

Upper-division major. Forty-four upper-division units are required, distributed as follows.

Required courses: Women's Studies 180, 181, and 182.

Elective courses: Thirty-two units (eight courses) of upper-division electives selected from the following courses: Anthropology 111, 116, 125, 126, 138A, 138B, 142B, 170, 172, 177; Art History 125B, 143B-C-D; Asian American Studies 128, 131, 132, 134, 135, 136; Black Studies 107, 121, 122, 127, 133, 136; Chicano Studies 112, 114, 122, 147, 148, 149, 151, 154AF, 154F, 155R, 155W, 167, 184A; Communication 124, 126; Dance 145W; English 114AA-ZZ, 122RB, 134NW, 165WL; Film Studies 138, 150PG, 163, 192B; French 106X, 130X, 131X, 132X, 136X, 168, 171X, 185A-B; German 163, 164G; History 117C, 117D, 124Q, 124WP, 146PW, 146W, 147G, 147Q, 148, 151W, 159A-B-C, 159P, 163A-B-P, 175D, 188A-B; Interdisciplinary Studies 110, 183H; Italian 142X, 143X, 144AX-ZX; Law and Society 140, 194LI; Linguistics 132, 133; Music 168E; Portuguese 183W; Religious Studies 102, 114D, 192; Slavic 162; Sociology 118G, 130CC, 130CS, 134, 134R, 140, 144, 144S, 151, 153, 154A-B, 154F, 155A, 155AG, 155M, 155R, 155W, 159LG, 159S, 176A, 185G, 185K; Spanish 194; Women's Studies 117C, 121, 124A-B, 130, 131, 135, 140, 141, 142, 143, 144, 145, 147Q, 150, 153, 154A, 155A-B, 159A-B-C, 159LG, 161, 163A-B, 171A-B, 171CN, 186AA-ZZ, 190, 196, 198, 199. (Women's Studies 186AA-ZZ, 190, 196, 198, and 199 may be repeated for credit. See individual course listings for limitations.)

Non-Women's Studies Special Topics or Selected Topics courses, and/or courses for which the instructor varies, may fulfill Area B, depending on course content and contingent upon Women's Studies Program approval.

Women's studies majors are strongly urged to fulfill the second part of the Area A General Education requirement by taking Writing 109WS. Transfer students are urged to take Writing 109WS, even if they have already fulfilled the Writing 50 requirement. Those majors who are unable to take Writing 109WS are urged to take Writing 109SS, Writing for the Social Sciences.

Minor—Women's Studies

All courses to be applied to the minor must be completed on a letter-grade basis, including both courses offered in women's studies and those offered by other departments and applied to the minor.

Preparation for the minor. Twelve units in lower-division courses are required. Students select 12 units from course offerings in areas A, B, and C.

Area A: Concepts in Women's Studies. One course required, selected from Women's Studies 10 and 20.
Area B: U.S. Feminisms. One course required, selected from Women's Studies 40 and 60.
Area C: Women, Nationalism and Transnationalism. One course required, selected from Women's Studies 30 and 70.

Upper-division minor. Twenty upper-division units, distributed as follows.

Required courses: Select one (4 units) from the following courses: Women's Studies 180, 181, and 182.

Elective courses: Sixteen units (four courses) of upper-division electives from the following courses: Anthropology 111, 116, 125, 126, 138A, 138B, 142B, 170, 172, 177; Art History 125B, 143B-C-D; Asian American Studies 128, 131, 132, 134, 135, 136; Black Studies 107, 121, 122, 127, 133, 136; Chicano Studies 112, 114, 122, 147, 148, 149, 151, 154AF, 154F, 155R, 155W, 167, 184A; Communication 124, 126; Dance 145W; English 114AA-ZZ, 122RB, 134NW, 165WL; Film Studies 138, 150PG, 163, 192B; French 106X, 130X, 131X, 132X, 136X, 168, 171X, 185A-B; German 163, 164G; History 117C, 117D, 124Q, 124WP, 146PW, 146W, 147G, 147Q, 148, 151W, 159A-B-C, 159P, 163A-B-P, 175D, 188A-B; Interdisciplinary Studies 110, 183H; Italian 142X, 143X, 144AX-ZX; Law and Society 140, 194LI; Linguistics 132, 133; Music 168E; Portuguese 183W; Religious Studies 102, 114D, 192; Slavic 162; Sociology 118G, 130CC, 130CS, 134, 134R, 140, 144, 144S, 151, 153, 154A-B, 154F, 155A, 155AG, 155M, 155R, 155W, 159LG, 159S, 176A, 185G, 185K; Spanish 194; Women's Studies 117C, 121, 124A-B, 130, 131, 135, 140, 141, 142, 143, 144, 145, 147Q, 150, 153, 154A, 155A-B, 159A-B-C, 159LG, 161, 163A-B, 171A-B, 171CN, 186AA-ZZ, 190, 196, 198, 199. (Women's Studies 186AA-ZZ, 190, 196, 198, and 199 may be repeated for credit. See individual course listings for limitations.) *Note: A combined maximum of 8 units of independent studies, Women's Studies 190, 198, and 199 may be applied to the minor.*

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Graduate Program

In addition to program requirements, candidates for graduate degrees must meet the university degree requirements described in the chapter "Graduate Education at UCSB."

Optional Ph.D. Emphasis in Women's Studies

The Women's Studies Program offers an interdisciplinary doctoral emphasis to students

previously admitted to a Ph.D. program in anthropology; English; German, Slavic, and Semitic studies; history; history of art and architecture; religious studies; or sociology. Students pursuing the emphasis in women's studies must complete four graduate courses; only one of the four required courses may be taken in the student's home department. The courses are Women's Studies 270, Feminist Epistemology and Pedagogy-; Women's Studies 280, Research Seminar; a course in feminist theory selected from those approved by the Women's Studies Program; and a topical seminar that addresses topics relevant to the study of women and gender, offered either in the Women's Studies Program or in another department. The student's doctoral committee must include a faculty member who is officially affiliated with the Women's Studies Program, either as one of the three required members or as an additional appointee. This committee conducts the student's Ph.D. qualifying examinations and supervises the student's dissertation research.

Students already enrolled in one of the participating departments may petition to add the doctoral emphasis by applying directly to the Women's Studies Program. Applicants may be at any stage of their Ph.D. work. Contact the Women's Studies Program for additional information on faculty interests, course offerings, and program requirements.

Women's Studies Courses

A list of women's studies courses with descriptions will be available before the beginning of each quarter, as close to the start of registration as possible. Students are urged to consult this list before registering.

LOWER DIVISION

10. Women, Society, and Representation
(4) STAFF

An examination of the theoretical and personal meanings of the social construction of gender in selected western and non-western societies. With attention to class, ethnicity, and sexual orientation specificity, how does "gender" structure and get represented in/through institutions and relationships?

20. Women in Western Societies
(4) OAKS

Introduction to basic concepts and approaches of women's studies within the social sciences. An extensive range of topics and analytic frameworks will be explored to understand the status of women in western societies.

30. Women's Struggles in Africa, Asia, and Latin America
(4) STAFF

An exploration of the impact of colonialism and underdevelopment on women's lives in Africa, the Middle East, Latin America, and Asia. Primary focus is on the economic division of labor, women and development, and women's role in liberation struggles.

40. Issues in the Humanities
(4) STAFF

This class will introduce students to central feminist questions raised in a variety of fields in the humanities, including literature, language, art and religion. Readings will explore the representation of women in American society and the diversity of women's experience.

60. Women of Color in the United States: Struggle and Resistance
(4) STAFF

Examination of the interlocking dynamics and politics of gender, race, sexuality, class, and culture in the experience of U.S. women of color. Readings focus on oppositional consciousness and resistance to oppression in the scholarship and literature by women of color.

70. Women and Development
(4) BHAVNANI

Examination of theories and practices of development primarily in the Third World through the lens of gender and the lives of women. Topics include colonization, the state, education, political participation, environment, population, health, and alternatives to development.

99. Independent Studies
(1-4) STAFF

Prerequisites: Women's Studies 10 or 20 or 40; consent of instructor and department.

Students must have a minimum 3.0 cumulative grade-point average. May be repeated for credit to a maximum of 8 units. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA course combined. No unit credit allowed toward the major.

Research under the direction of a faculty member. Students are offered an opportunity to conduct independent or collaborative research or to act as interns for faculty-directed research projects.

UPPER DIVISION

117C. Women, the Family, and Sexuality in the Middle Ages
(4) FARMER

Prerequisite: History 4B or upper-division standing.

Same course as History 117C. Not open for credit to students who have completed History 117.

Family structure; perceptions and ideals of intimate and familial relations; status, perceptions, and experiences of women in western Europe circa 400-1400 A.D. Special attention on social, political, and religious contexts.

124A. Women, Gender, and Sexuality in Europe, 1750-1914
(4) RAPPAPORT

Prerequisite: History 4C.

Same course as History 124A.

The roles of women, gender, and sexuality in eighteenth and nineteenth century Europe. Exploration of the nature of women and revolution: religious, legal, scientific, and popular conceptions of gender and sexuality; industrialization and family life, the rise of organized feminism.

124B. Women, Gender, and Sexuality in Europe, 1914-Present
(4) RAPPAPORT

Prerequisite: History 4C.

Same course as History 124B.

The relationship between war, revolution, fascism, socialism, feminism, and consumerism and the history of the family, gender, and sexual identities in the twentieth century.

130. Perspectives on Women's Health
(4) OAKS

Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Investigation of the power that medicine has in shaping health experts' and lay individuals' understandings of health and health practices. Particular attention is paid to how women's health issues come to be seen as "social problems," past and present.

131. The Politics of Women's Choices: Reproduction and Reproductive Technologies
(4) OAKS

Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Exploration of theoretical, popular, and political debates over reproductive technologies in terms of women's power and choices. Investigation of how cultural and historical changes in reproductive practices influence ideas about nature, society, and progress. Examination of case studies on current controversies.

135. Feminist Theories of Science and Feminist Scientists
(4) OAKS

Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Exploration of feminist analyses and critiques of science in social, historical, an political contexts. How does science construct gender? How and why are women excluded from scientific discourses and practices? How have women transformed science, and what is "feminist science?"

140. Asian American Women's Writing
(4) STAFF

Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

A survey of the writings of Asian American women. It situates second generation and contemporary Asian American women writers in their particular ethnic cultures to better understand their contributions to U.S. traditions of representations.

141. Women and Eastern European Film: An Exploration in Second World Cinema
(4) STAFF

Prerequisite: Film Studies 46 or upper-division standing.

Same course as Film Studies 138.

Investigation of the role of women in Eastern European cinema both in their involvement in the industry and their portrayal on the screen in propaganda and beyond. Discussion of the cinemas of Czechoslovakia, Hungary, Poland, and the former Soviet Union.

142. Black Women Filmmakers
(4) BOBO

Not open for credit to students who have completed Women's Studies 186JB. Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

An opportunity to view films (animation, documentary, experimental and narrative), examine the specifics of media production, compare the various works produced by black women, and acquire the skills necessary for media criticism.

143. Women's Film Narratives
(4) BOBO

Not open for credit to students who have completed Women's Studies 186JC. Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Examination of the dynamics of family, race, sexuality, resistance, and cultural transformation through women's novels and film adaptations and other films which have had a significant impact on the national consciousness.

144. Representation and Activism
(4) BOBO

Not open for credit to students who have completed Women's Studies 186JD. Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Exploration of the strategies by which social groups resist systems of oppression through readings and works from independent filmmakers.

145. Media Adaptations of Black Women's Literature
(4) BOBO

Not open for credit to students who have completed Women's Studies 186JE. Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior women's studies course.

Investigation of the visual translation of works

which have had a profound effect on American culture. Examination of the ways in which the media versions may have altered, in critical ways, the works' social and ideological meanings.

147Q. Readings on African History
(4) MIESCHER

Prerequisite: History 49 or 147A or 147B.

Same course as History 147Q. May be repeated for credit to a maximum of 8 units.

A discussion and reading seminar on selected topics in African history.

150. Modern Sex and Modern Love
(4) BOSCAGLI

May be repeated for credit to a maximum of 8 units, but only 4 units may be applied toward the major. Same course as Film Studies 162.

Examination of how the media reflect and shape ideas of and about contemporary feminism. In an effort to be topical, subjects covered consist of contemporary feminist issues featured in the media during the quarter.

1S3. Women and Work
(4) FENSTERMAKER

Prerequisite: upper-division standing.

Same course as Sociology 153.

The course will begin with readings and discussion of the sociological features of work in society. The role of women in the labor market will be explored, as well as their lives as unpaid workers in their own homes. Finally, more global issues of sexual inequality and social change will be discussed.

154A. Sociology of the Family
(4) FENSTERMAKER

Prerequisites: upper-division standing or a prior course in sociology.

Same course as Sociology 154A.

A lecture course on family and household organization, past and present. Attention to contemporary issues in the family focusing on gender, class, and cultural variation.

1SSA. Women in American Society
(4) SCHNEIDER

Prerequisite: upper-division standing.

Same course as Sociology 155A.

The roles and life styles of women in various American subcultures and the ideologies developing around them.

1SSB. Sociological Perspectives on Women
(4) FENSTERMAKER

Same course as Sociology 155B. May be repeated once providing topics are different.

Recommended preparation: Sociology 155A.

Advanced study in the sociology of women. Course format (seminar or lecture) and topics vary from year to year. Topics may include: the analysis of the status of women in the labor force, women's class position, theoretical and practical aspects of patriarchy.

1S9A. Women in American History
(4) STAFF

Prerequisites: two quarters from History 17A-B-C or upper-division standing.

Same course as History 159A.

Social history of women in America from the colonial period to 1800. Changing marriage; reproduction and work patterns, and cultural values about the female role. Attention to racial, class and ethnic differences. Analysis of feminist thought and the several women's movements.

159B. Women in American History
(4) COHEN

Prerequisites: two quarters from History 17A-B-C or upper-division standing.

Same course as History 159B.

Social history of women in America from 1800 to 1900. Changing marriage, reproduction and work patterns, and cultural values about the female role. Attention to racial, class, and ethnic differences. Analysis of feminist thought and the several women's movements.

1S9C. Women in Twentieth-Century American History
(4) DEHART

Same course as History 159C.

A continuation of Women's Studies 159A-B from 1900 to the present.

1S9LG. Sociology of Lesbian and Gay Communities
(4) SCHNEIDER

Prerequisite: upper-division standing.

Same course as Sociology 159LG. Not open for credit to students who have completed Sociology 146.

Origins and transformation of lesbian and gay communities and social movements, with special attention to ideological development, major social problems, cultural production, race, ethnic and gender differences, organization formation, and political conflict.

161. The Social Construction of Sexuality
(4) STAFF

Letter grade required for majors and minors.

Recommended preparation: upper-division standing or a prior course in women's studies.

This course explores how sexuality is shaped, controlled and defined by social and cultural forces in England and the U.S. By using historical and literary sources we will examine the variable understanding of human sexuality in the last two centuries.

163A. Women and Public Policy in Twentieth-Century America
(4) DEHART

Prerequisite: History 159A or 159B or 159C or a prior course in women's studies.

Same course as History 163A.

How gender-based cultural attitudes and social roles, collective action, and economic and social change interacted to shape law and public policy with respect to work, family, and legal and reproductive rights. From 1900 through approximately 1945.

163B. Women and Public Policy in Twentieth-Century America
(4) DEHART

Prerequisite: History 159A or 159B or 159C or a prior course in women's studies.

Same course as History 163B.

How gender-based cultural attitudes and social roles, collective action, and economic and social change interacted to shape law and public policy with respect to work, family and legal and reproductive rights. From World War II to the present.

171A-B. Feminist Praxis: Internship Seminar
(4-4) STAFF

Prerequisite: upper-division standing.

Letter grade required for majors and minors. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of the final quarter.

Recommended preparation: a women's studies major or minor or two lower-division women's studies courses.

This two quarter course integrates fieldwork experience with an academic seminar focusing on the historical, sociological, and political issues surrounding community services for women. Each student will be placed as an intern in a community agency for both quarters.

171CN. French Feminism in the Nineteenth Century
(4) NESCI

Same course as French 171X.

Women's new positions in the public sphere of power following the French Revolution and their changing personal and collective aspirations throughout the century. Rights of women, women's voice and writing (journalism and autobiography), feminism, socialism and revolution. Taught in English.

180. Feminist Critiques of Inquiry
(4) STAFF

Prerequisite: upper-division standing.

Open to majors and minors. Letter grade required for majors.

Assessment of key methods and assumptions of discipline-based knowledge production, and readings of feminist critiques of such methodologies and epistemology.

181. Key Issues in Feminist Theory
(4) STAFF

Prerequisites: upper-division standing; a major or minor in women's studies.

Letter grade required for majors.

Readings in feminist theories since de Beauvoir, to frame and interpret selected contemporary social, cultural, and political movements and the roles of women within U.S. domestic and/or transnational territories.

182. Feminist Research and Practice
(4) OAKS

Prerequisites: upper-division standing; a major in women's studies.

Open to minors with consent of instructor. Letter grade required for majors and minors.

Intended to be the culminating experience for Women's Studies majors. A seminar focusing on participants' individual research on selected social and cultural topics, with faculty mentors or through internships in women-identified organizations.

186AA-ZZ. Gender and Culture
(4) STAFF

Prerequisite: upper-division standing.

May be repeated for credit to a maximum of 12 units provided letter designations are different. Letter grade required for majors.

Lectures in special areas of interest in contemporary women's studies. Consult the program office regarding proposed course topics.

190. Women's Community Organization
(2-4) STAFF

Prerequisites: upper-division standing; open to women's studies majors only.

May be repeated for credit to a maximum of 6 units, but only 4 units may be applied toward the major.

Combines independent service in an organization serving the women's community with reflection and analysis under the supervision of a faculty member. Students will conduct observations and write a term paper. Readings relevant to the internship experience are required.

196. Senior Seminar
(4) STAFF

Prerequisites: Women's Studies 180 and 181; open to women's studies majors only.

May be repeated for credit to a maximum of 8 units.

A senior seminar intended for majors in their senior year that permits some analytic synthesis across themes in women's studies. Topics will vary with instructor.

198. Readings in Women's Studies
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in women's studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 4 units of Women's Studies 198/199 courses combined to the major. Women's Studies 198 may be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

Directed readings in women's studies under the guidance of a faculty member in the program. Students wishing to enroll should prepare a short written plan of study.

199. Independent Studies in Women's Studies
(1-4) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in women's studies.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are

limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Students may apply a maximum of 4 units of Women's Studies 198/199 courses combined to the major. Women's Studies 199 may be repeated for credit to a maximum of 12 units, but only 4 units may be applied toward the major.

Independent research and writing under the guidance of a faculty member in the program. Students wishing to enroll should prepare a short written plan of study.

GRADUATE COURSES

270. Feminist Epistemologies and Pedagogy
(4) OAKS

Acquaints students with the scope and range of feminist epistemological critiques across disciplines and pursues issues relevant to problematizing of knowledge seeking, such as theories of agency rooted in gender, race, class, and sexuality.

280. Research Practicum
(4) STAFF

Prerequisite: Women's Studies 270.

A cross-disciplinary seminar in which fundamental questions in contemporary feminist research practice are considered in light of students own graduate projects. As students read and critique each others' work, issues specific to women's studies research and teaching will be discussed.

291A. Topics in Feminism and Art History
(4) STAFF

Same course as Art History 291A.

Course will examine both feminist critique of Western representational practices and feminist interventions in the history of art, including how the history of women artists has been constructed and how it might be rewritten. Topics will vary.

291B. Topics in Gender and Representation
(4) STAFF

Same course as Art History 291B.

Course will focus on the construction of gender identities through high art and popular media, the construction of femininities and masculinities though images and the significance of gender as a basic representational category. Topics will vary.

501. Apprentice Teaching in Women's Studies
(4) STAFF

Prerequisite: teaching assistant or associate status.

May be repeated for credit.

Students will receive faculty supervision as they lead discussion sections, assist in the preparation and evaluation of exams, and advise on written assignments. Attention will be given to the challenges posed by multidisciplinary materials and perspectives. Weekly meetings with instructor required.

594AA-ZZ. Special Topics in Women's Studies
(4) STAFF

Prerequisites: consent of instructor; current graduate enrollment.

May be repeated for credit with approval of program chair.

Special seminar on research topics of current interest.

596AA-ZZ. Directed Readings and Research
(2-8) STAFF

Prerequisites: consent of instructor, current graduate enrollment.

May be repeated for credit with approval of program chair.

Individual tutorial relevant to M.A. or Ph.D. projects. Plan of study must be approved by program chair.

Writing Program

Writing Program,
Division of Humanities and Fine Arts,
South Hall 1520;
Telephone (805) 893-2613
E-mail: wpinfo@humanitas.ucsb.edu
Web site: www.writing.ucsb.edu

Acting Program Director: Judy Kirscht

Faculty

Laurence Behrens, Ph.D., UC Los Angeles; M.F.A., Columbia University, Lecturer

Mashey M. Bernstein, Ph.D., UC Santa Barbara, Lecturer

Maureen K. Driscoll, M.A., University of Washington; M.T.S., Franciscan School of Theology, Lecturer

Judith M. Kirscht, M.A., University of Michigan; M.F.A., University of Michigan, Lecturer

LeeAnne G. Kryder, Ph.D., Bowling Green State University, Lecturer

C. Hugh Marsh, B.A., Claremont, McKenna College, Lecturer

Michael F. Petracca, M.A., M.Ed., UC Santa Barbara, Lecturer

Mark A. Schlenz, Ph.D., UC Santa Barbara, Lecturer

Madeleine I. Sorapure, Ph.D., SUNY Binghamton, Lecturer

Norinne J. Starna, Ph.D., University of Pittsburgh, Lecturer

William N. Tingle, Ph.D., UC Santa Barbara, Lecturer

Leonard D. Tourney, Ph.D., UC Santa Barbara, Lecturer

Muriel Zimmerman, Ph.D., Temple University, Senior Lecturer with Security of Employment

Emeriti Faculty

Valerie A Hobbs, M.A., UC Santa Barbara, Lecturer Emeritus

Writing Program Advisory Committee

Charles Bazerman, Chair, Ph.D. (English)

Jan Frodesen (ex officio), Ph.D., Director (English as a Second Language)

Judy Kirscht, M.A., Acting Director (Writing Program)

Claudine Michel, Ph.D. (Black Studies)

William Prothero, Ph.D. (Geology)

Robert Rinker, Ph.D. (Chemical and Nuclear Engineering)

The Writing Program curriculum is organized on the premise that the instruction and practice in expository writing can further the university's goal of producing knowledgeable graduates capable of explaining their ideas clearly and persuasively to general or specialized audiences. Writing is a central activity in all subjects and majors at the university, and writing cannot be learned once, in the freshman year. At every level, student writers can profitably study the methods of inquiry, research, and exposition appropriate to their fields, in contexts that value clear analysis, critical thinking, and clarity in written and oral expression.

The Writing Program offers required and elective courses at freshman and advanced levels, as well as a minor in professional writing. Students must satisfy the University Subject A requirement *during their first year at UCSB.* In addition, students in the College of Letters and Science must satisfy General Education Area A. Two courses are needed which may be chosen from Writing 2, 2E, or 2LK (which must be completed within the first six quarters) and one additional course from the following list: Writing 50, 50E, 50LK, 109AC, 109EC, 109ED, 109ES, 109F, 109HP, 109L, 109LA, 109SS, 109ST, 109V, or English 10. Writing 109 courses cover such topics as scientific, social science, and legal writing and writing for film studies, visual arts, and health sciences.

Writing 1LK, 2LK, and 50LK are referred to as LINKS courses and require co-enrollment with specific companion courses. The instructional aim of LINKS courses is to help students master academic writing and critical thinking skills within the context of a General Education or major course. Refer to the *Schedule of Classes* for a listing of LINKS writing courses.

Most freshmen in the College of Engineering take a special sequence of courses that fulfill the Subject A and Area A General Education requirements.

Academic Communities for Excellence (ACE), a component of the UCSB Writing Program, offers sections of writing classes to fulfill the Subject A and Area A General Education requirements. The program offers a unique opportunity for EOP students to develop their writing and critical reading skills. Small class size enables students to receive intensive conferences and close communication with support services.

Graduate students employed as teaching assistants in the Writing Program are required to take a two-quarter sequence: 501A in the spring prior to and 501B in the fall concurrent with their first teaching assignment. In addition, all TAs must be enrolled in Writing 500, Directed Teaching, every quarter they teach in the program.

Waiver Examinations

A Writing 50 Waiver Examination is offered to students in the College of Letters and Science with junior or senior standing. Students are required to register for the exam in the Writing Program office (South Hall 1520) prior to the exam. Source materials and directions for additional research required for the exam may be obtained in the Writing Program office. Students should register for the exam as early in the quarter as possible and plan to spend 15-20 hours preparing for the exam.

Advising and Information

The Writing Program office is open for student advising Monday-Friday, 8:00-noon and 1:00-5:00 p.m. Students are encouraged to talk with

Writing Program staff and faculty advisors to plan a program of writing courses that will help them to achieve their academic and professional goals.

Writing Prizes

The annual Business Writing contest is open to individuals and groups of students who have taken Writing 109AC and Writing 109EC. The focus of the contest sometimes varies, but for the 2000-2001 academic year, awards will be given for the best business plans. Information about the contest, with application forms and deadlines, is available in the Writing Program office.

The Writing Program also administers the Scheinfeld Award, which recognizes excellence in business communication.

Undergraduate Program

Minor—Professional Writing

The Writing Program offers a minor in professional writing for intermediate and advanced students in all majors.

Students will experience both theoretical and practical coursework via research seminars in the rhetoric of professional writing, and in editing and publishing, as well as an internship.

All courses applied to the minor must be completed on a letter-grade basis. These include both courses offered in the Writing Program and those offered by other departments and applied to the minor. Students are subject to all course prerequisites and any major restrictions in enrolling for courses as established by departments, so please consult the UCSB *General Catalog* and the quarterly *Schedule of Classes* publications to ensure eligibility for enrolling.

Preparation for the minor. Writing 2 (or equivalent).

Upper-division minor. Twenty-two to 24 units, distributed as follows:

A. One course from Engineering 103, Writing 109AC, 109EC, 109ES, or 109ST.
B. One course from 109AA-ZZ.
C. At least 4 units chosen from among Writing 109AA-ZZ, 120, 125, or 199.
D. Ten to 12 units from Writing 150, 151A-B *or* 155A-B (choose from either the 151 series or the 155 series, but not from a combination of both).

Note: Substitutions and waivers are subject to approval by the chair of the department. Please see page 116 for special conditions governing minors in the College of Letters and Science.

Students who wish to minor in professional writing must meet with a Writing Program advisor to record their intention to pursue the minor, to review requirements, and to plan and record their progress.

Writing 150, 151A-B *or* 155A-B, are the final courses in a sequence of upper-division requirements for the minor in professional writing. Instructor permission is required for registration in these courses. Students who will have completed at least two of the three upper-division courses (Section A, B, and C) for the minor may, in their senior year, be admitted to Writing 151A-B *or* 155A-B by the following process:

Present a portfolio of representative work, a statement of interest in completing the minor, and an application form which asks students to describe their familiarity with communication software and hardware, as well as with a variety of writing genres. Deadline for application is the fourth week in the quarter prior to Writing 151A or 155A. (Consult the Writing Program office for the specific date at the beginning of each quarter.)

Placements in Writing 151A-B and Writing 155A-B are limited, and not all students who wish to complete the minor will be able to do so. Decisions will be based on the applicant's promise for profiting from and contributing to Writing 151A-B *or* 155A-B, as well as to the internship experience.

Writing Courses

LOWER DIVISION

1. Approaches to University Writing
(4) STAFF

Open to students who have not satisfied the Subject A requirement. Not open for credit to students who have completed English 1 or Writing 1LK, or Writing 1E.

Principles of critical reading, thinking, and writing in the university. Students analyze academic discourse, develop rhetorical strategies for exposition and argument, practice examination writing, and write and revise papers. Completion with a grade of C or better meets Subject A requirement.

1E. Approaches to University Writing for Engineers
(4) STAFF

Open to students who have not satisfied the Subject A requirement. Not open for credit to students who have completed English 1, Writing 1LK, or Writing 1.

Principles of critical reading, thinking, and writing in the university. Students analyze academic discourse, develop rhetorical strategies for exposition and argument, practice examination writing, and write and revise papers.

1LK. Approaches to University Writing
(4) STAFF

Open to students who have not satisfied the Subject A requirement. Coenrollment in linked companion course. Not open for credit to students who have completed English 1 or Writing 1, or Writing 1E.

Principles of critical reading, thinking, and writing in the university. Students analyze academic discourse, develop rhetorical strategies for exposition and argument, practice examination writing, and write and revise papers. Completion with a grade of C or better meets Subject A requirement. This course is taught in conjunction with a specified companion course. Readings and assignments are related to the subject matter of the companion course.

2. Academic Writing
(4) STAFF

Prerequisite: satisfaction of Subject A requirement.

Not open for credit to students who have completed English 2 or Writing 2LK.

A writing course focusing on developing analytical skills, synthesizing multiple sources, sustaining coherent arguments, and revising for clarity of style. Reading and writing assignments are drawn from a range of academic disciplines.

2E. Academic Writing for Engineers
(4) STAFF

Prerequisites: satisfaction of Subject A requirement.

Not open for credit to students who have completed English 2, Writing 2LK, or Writing 2.

A writing course focusing on developing analytical skills, synthesizing multiple sources, sustaining coherent arguments, and revising for clarity of style. Reading and writing assignments are drawn from a range of engineering disciplines.

2LK. Academic Writing
(4) STAFF

Prerequisite: satisfaction of Subject A requirement and coenrollment in linked companion course.

Not open for credit to students who have completed English 2 or Writing 2.

A writing course focusing on developing analytical skills, synthesizing multiple sources, sustaining coherent arguments, and revising for clarity of style. Reading and writing assignments are drawn from a range of academic disciplines. This course is taught in conjunction with a specified companion course. Readings and assignments are related to the subject matter of the companion course.

50. Writing and the Research Process
(4) STAFF

Prerequisite: Writing 2 or 2LK.

Not open for credit to students who have completed English 3 or Writing 50LK.

A writing course addressing the analytical skills underlying the research process of academic and professional communities. Sections vary in topic and disciplinary emphasis.

50E. Writing and the Research Process for Engineers
(4) STAFF

Prerequisite: Writing 2 or 2LK.

Not open for credit to students who have completed English 3, Writing 50LK, or Writing 50.

A writing course addressing the analytical skills underlying the research process of academic and professional communities within engineering.

50LK. Writing and the Research Process
(4) STAFF

Prerequisite: Writing 2 or 2LK.

Coenrollment in linked companion course. Not open for credit to students who have completed English 3 or Writing 50.

A writing course addressing the analytical skills underlying the research process of academic and professional communities. This course is taught in conjunction with a specified companion course. Readings and assignments are related to the subject matter of the companion course.

UPPER DIVISION

109AC. Writing for Accounting Economics
(4) STAFF

Prerequisites: Writing 2; Economics 136A (may be taken concurrently); upper-division standing.

Writing practices in academic and professional accounting. Research sources include publications, databases, case studies, interviews. Assignments include reports, correspondence, memorandum, presentations. Attention to critical thinking, research techniques, international context, use of information technology, and visual communications.

109EC. Writing for Economics and Business Economics
(4) STAFF

Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109C.

Strategy, style, format, and applications for various types of academic and professional writing including papers, reviews, abstracts, proposals. Attention to visual aspects of communication, design, and graphics.

109ED. Writing for the Teaching Professions
(4) STAFF

Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 106WP.

Research, discussion, and analysis of current issues in educational theory, practice, and policy. Appropriate for prospective credential students.

109ES. Writing for Environmental Studies
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109I.

Analysis and practice of various forms of writing for environmental studies, both academic and professional. Attention to research methods, design of papers, development of graphics, stylistic clarity, and editing strategies.

109F. Writing for Film
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109K or Writing 109FS.

Analysis and practice of various forms of writing for film, including argumentative writing, film reviews, and essays. Of special interest to majors in film studies, English, and social sciences.

109HP. Writing for Health Professionals
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109M.

Strategy, analysis, format for various types of academic and professional writing in the health care field. Contemporary topics/issues will be the basis of study, discussion, research, and writing.

109HU. Writing for the Humanities
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109H.

Analysis of various forms of writing for the humanities, both academic and professional. Attention to modes and methods of argumentation, research methods, design of papers, stylistic clarity, and editing strategies.

109L. Legal Writing
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109D.

Practice in applying rules to facts in analyzing issues and in writing clearly, succinctly, and cogently in various forms of legal discourse.

109LA. Advanced Legal Writing
(4) STAFF
Prerequisites: Writing 109L or English 109D; upper-division standing.

Not open for credit to students who have completed English 109L.

Practice for skilled writers on a variety of legal documents, letters, agreements, office memoranda, and appellate briefs. Fundamentals of legal research, including techniques for gathering evidence and for analyzing and applying statutory and case law to hypothetical problems.

109SS. Writing for the Social Sciences
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109B.

Analysis and practice of various research methods and forms of writing in the social sciences including qualitative/ethnographic, quantitative, interpretive, and theoretical. Writing projects such as literature reviews, proposals, case studies, scientific reports, interviews. Attention to disciplinary resources, formal conventions, graphics, and style.

109ST. Writing for Science and Technology
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109A.

Analysis and practice of various forms of scientific and technical writing, both academic and professional, such as reports, proposals, journal articles, and abstracts. Attention to research methods, design of papers, development of graphics, technical style, and editing strategies.

109V. Writing for the Visual Arts
(4) STAFF
Prerequisites: Writing 2 or 2LK; upper-division standing.

Not open for credit to students who have completed English 109E.

Analysis and practice of various forms of writing for the visual arts, including reviews of film and art shows, grant proposals, and professional résumés. Of special interest to majors in the arts.

120. Advanced Topics in Writing
(4) STAFF
Prerequisites: Writing 2; upper-division standing.

Not open for credit to students who have completed English 109F. May be repeated for credit to a maximum of 12 units.

Production of complex documents; visual aspects of communication; stylistic clarity; editing for varied purposes. Each section will have a special focus, such as electronic writing or proposal writing.

125. Special Topics in Academic and Professional Writing
(4) STAFF
Prerequisites: Writing 2 or 2E or 2LK; and, Writing 50 or 50E or 50LK or 109AA-ZZ, or English 10; upper-division standing.

Directed group reading, writing, and discussion of specialized topics in writings such as manuscript preparation, editing of tables and figures, and writing of multimedia materials.

1S0. Internship in Writing
(2-4) STAFF
Prerequisites: upper-division standing; consent of instructor.

May be repeated for credit to a maximum of 8 units.

Fieldwork experience and weekly seminar.

151A. Seminar in Professional Editing
(4) STAFF
Prerequisites: Engineering 103 or Writing 109AC or 109ES or 109ST; a prior course from Writing 109AA-ZZ; consent of instructor.

Not open for credit to students who have completed Writing 154 or 151. Course required for credit in the minor.

Focus on grammatical and rhetorical expertise, genre and format, diction, style, tone, visuals, documentation style. Class projects include working as editors to help authors prepare texts for publication.

1S1B. Seminar in Professional Editing
(4) STAFF
Prerequisites: Writing 151A; concurrent enrollment in Writing 150; consent of instructor.

Not open for credit to students who have completed Writing 154 or 151. Course required for credit in the minor.

Focus on grammatical and rhetorical expertise, genre and format, diction, style, tone, visuals, documentation style. Class projects include working as editors to help authors prepare texts for publication.

1SSA. Seminar in Technical Communication
(4) STAFF
Prerequisites: Engineering 103 or Writing 109AC or 109EC or 109ES or 109ST; a prior course from Writing 109AA-ZZ; consent of instructor.

Not open for credit to students who have completed Writing 153 or 154. Course required for credit in the minor.

Information design in electronic and hardcopy documents; focus on grammatical and rhetorical expertise. Topics include communication practices in the workplace; oral, graphic, and electronic literacies. Project-based course culminating in multimedia portfolio.

15SB. Seminar in Technical Communication
(4) STAFF
Prerequisites: Writing 155A; concurrent enrollment in Writing 150; consent of instructor.

Not open for credit to students who have completed Writing 153 or 154. Course required for credit in the minor.

Information design in electronic and hardcopy documents; focus on grammatical and rhetorical expertise. Topics include communication practices in the workplace; oral, graphic, and electronic literacies. Project-based course culminating in multimedia portfolio.

199. Independent Studies in Writing
(1-5) STAFF
Prerequisites: upper-division standing; consent of instructor.

Students must have at least a 3.0 grade-point average for the preceding three quarters and satisfied Area A requirements. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Writing 199 may be repeated for credit to a maximum of 10 units.

Writing, reading, and conference with specialized research or focus topic.

199RA. Independent Research Assistance in Writing
(1-5) STAFF
Prerequisites: upper-division standing; consent of instructor.

Students must have at least a 3.0 grade-point average for the preceding three quarters and satisfied Area A requirements. Students are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined. Writing 199 may be repeated for credit to a maximum of 10 units.

Faculty-supervised research assistance.

GRADUATE COURSES

S00. Directed Teaching
(4) STAFF
Prerequisites: appointment as teaching assistant or associate.

Yields no unit credit for advanced degrees.

Teaching assistants must register during quarter of service for this course of supervision and instruction.

S01A-B. Practicum in Academic Writing Instruction
(2-2) STAFF
Prerequisite: application submitted for Writing Program TA appointment.

Preparatory orientation and concurrent training for newly appointed Writing Program teaching assistants. Topics include theories of composition pedagogy, academic literacies, principles of instructional design and curriculum development, effective classroom practices, and assessment of student writing.

Donald Bren School of Environmental Science and Management

Donald Bren School of Environmental Science and Management
Physical Sciences North 4670; Telephone (805) 893-7611
Web site: www.bren.ucsb.edu
Dean: Jeff Dozier

UC Santa Barbara's Donald Bren School of Environmental Science and Management is a professional school aimed at training graduate students in rigorous interdisciplinary approaches to environmental problem solving. The Bren School offers the Master's of Environmental Science and Management (M.E.S.M.), a professional degree, and the Ph.D. in Environmental Science and Management, a research-oriented degree. The Bren School's mission is to play a leading role in researching environmental issues, training research scientists and environmental management professionals, and identifying and solving environmental problems.

In the past, the diverse disciplines addressing environmental issues have developed independently. Now, research and teaching have reached the point where significant progress requires weaving together elements of formerly disparate disciplines and blurring traditional boundaries. The School brings together a range of natural and social scientists to research important environmental questions. Moreover, because environmental issues arise in legal, political, and business contexts, the School's faculty also brings together law and business professors who provide perspectives from professional arenas. The Bren School continues to engage in a campaign of faculty recruitment and will appoint several new faculty members over the next couple of years.

A guiding principle of the School is that the analysis of environmental problems requires quantitative training in more than one discipline and an awareness of the physical, biological, social, political, and economic decisions that arise from scientific or technological decisions. The Bren School incorporates this new view of environmental science and management into its programs and equips students with the scientific knowledge and managerial skills necessary to meet growing environmental challenges. The Bren School strives to provide a truly interdisciplinary program that goes beyond mere coursework in several disciplines to form a coherently integrated program blending teaching, research, and real-world problems.

Built into the Bren School's program is resource-sharing with the College of Letters and Science and the College of Engineering. A significant amount of a student's coursework may include courses from other departments. Moreover, the School fosters collaborative research and teaching among the University of California campuses. To facilitate the Bren School's intercampus endeavors, Dennis Aigner of the Graduate School of Management at UC Irvine was appointed the Bren School's Associate Dean for Business Management and John Dwyer of Boalt Hall School of Law at UC Berkeley was appointed the Bren School's Associate Dean for Law and Policy.

One outcome of the intercampus program is that the Bren School administers a new emphasis in Corporate Environmental Management available to UC MBA students at other UC campuses. Students and instructors involved in the program convene at UCSB for intensive courses. Master's and Ph.D. students in the Bren School also have access to these courses. There is a crucial need for effective interaction among natural and social scientists, policy makers, and members of the business community. Mixing students from these different academic cultures enriches the learning experience and provides an important mechanism for stimulating this interaction.

Faculty

Dennis Aigner, Ph.D., UC Berkeley, Professor (econometrics, corporate environmental management)

Sandy Andelman, Ph.D., Adjunct Assistant Professor (conservation biology, population ecology, conservation planning, experimental design and statistics)

Antonio Bento, Ph.D., UC Berkeley (expected June 2000), Assistant Professor (environmental economics, public finance, microeconomic theory, applied general equilibrium and development economics)

Christopher Costello, Ph.D., UC Berkeley (expected May 2000), Assistant Professor (environmental and resource economics, dynamic optimization, quantitative ecology, stochastic modeling)

Frank Davis, Ph.D., Johns Hopkins University, Professor (plant ecology, quantitative biogeography, vegetation remote sensing, ecological applications of remote sensing and geographic information systems, conservation planning, fire ecology)

Magali Delmas, Ph.D., HEC Graduate School of Management, Paris, Assistant Professor (corporate environmental mangement, impact of technological and regulatory uncertainties on industry choices)

Jeff Dozier, Ph.D., University of Michigan, Professor (snow, earth system science, remote sensing and information systems)

Tom Dunne, Ph.D., Johns Hopkins University, Professor (drainage basin and hillslope evolution, hydrology and floodplain sedimentation, applications of hydrology and geomorphology in environmental management)

John P. Dywer, Ph.D., California Institute of Technology, Professor (environmental law and policy, property law)

James Frew, Ph.D., UC Santa Barbara, Assistant Professor (applications of computing and information science to large-scale problems in environmental science, including algorithm and component development, information system specification and integration, data management, and digital libraries)

Trish Holden, Ph.D., UC Berkeley, Assistant Professor (pathogens in the environment, microbial ecology of pollutant degradation, soil microbiology)

Arturo Keller, Ph.D., Stanford University, Assistant Professor (fate and transport of

pollutants, development of technologies for containment, remediation, and monitoring)

Bruce Kendall, Ph.D., University of Arizona, Assistant Professor (quantitative ecology with a focus on animal and plant population dynamics)

Charles Kolstad, Ph.D., Stanford University, Professor (industry organization and environmental/resource economics, environmental policy, structure of energy markets and environmental regulations)

Natalie Mahowald, Ph.D. Massachusetts Institute of Technology, Assistant Professor (atmospheric cycles of water vapor, trace gases and aerosols and their potential impacts on the climate and hydrology)

Carol McAusland, Ph.D., University of Michigan, Assistant Professor (trade and environment)

John Melack, Ph.D., Duke University, Professor (limnology, biogeochemistry, and remote sensing with active, long-term studies in tropical Brazil and alpine and saline lakes in California)

Walt Sadinksi, Ph.D., Adjunct Assistant Professor (ecological effects of chemical toxicants, ultraviolet radition, and other abiotic stresses, amphibian and wetland ecology)

Dave Siegel, Ph.D., University of Southern California, Professor (ocean color remote sensing and optical oceanography, coupling of physical and optical processes in ocean biogeochemical fluxes, marine resources)

Degree Programs

Admission

Application materials are available from the Bren School and are normally accepted for Fall quarter only. The application deadline is February 1 for primary consideration and for consideration for School-based support. Applications will be accepted until May 1, space permitting. Ph.D. applicants who want to be considered for the campus-wide fellowship competition must apply no later than December 15. Applicants must hold a bachelor's degree or equivalent from an accredited institution of higher education and have achieved at least a B average (3.0 on a 4-point scale) since their junior year. All applicants are required to submit verbal, quantitative, and analytical Graduate Record Examination (GRE) scores. Applicants whose native language is not English must receive a score of at least 550 on the Test of English Language as a Foreign Language (TOEFL), taken within two years of their application to UCSB. Students who have earned a bachelor's or master's degree from a U.S. college or university are exempt from this requirement.

The Bren School welcomes applications to its professional master's program from prospective students from varied undergraduate majors who seek an intellectually challenging education designed to prepare them for leadership in a variety of careers in environmental problem solving. Applicants should be interested in obtaining broad and balanced training in natural and social science and management and participating in a program that emphasizes quantitative and analytical approaches to assessing and solving environmental problems.

Necessary background for the Master's program includes one year of college-level mathematics, one year of college-level science, a course in microeconomics, and an introductory statistics course. Students lacking some of this preparation may be accepted for admission, but it is expected that deficiencies will be made up prior to entrance by means of formal course work or other arrangements agreed upon by the applicant and the School. A small number of deficiencies may be made up during the first year in residence, but these courses will not count toward the unit requirements for the MESM.

Admission to the Ph.D. program is highly competitive and dependent upon acceptance by a faculty sponsor with compatible research interests. To be considered for the Ph.D. program, applicants must meet the entrance requirements for the Master's degree, have a high upper-division/graduate GPA, and excellent GRE scores. Each faculty sponsor's entrance criteria beyond these minimum requirements will depend upon his or her research focus. A Master's degree or equivalent is not required for admission.

Master of Environmental Science and Management (M.E.S.M.)

The Master's of Environmental Science and Management (MESM) is a professional degree intended for students who will enter or re-enter the work force after graduation. It is not designed as an intermediate degree for the Ph.D., although MESM graduates will be well prepared for Ph.D. study. Students are trained to work in government agencies, corporations, non-profit organizations, and consulting firms. Bren MESM graduates have a suite of qualities, including clear and critical thinking, leadership skills, professionalism, and creativity, that allow them to be leaders in solving the environmental problems of the 21st century.

The coursework for the Master's degree is multi-disciplinary, incorporating courses in natural sciences, social sciences, law, and business. The courses emphasize quantitative and analytic thinking, while they also train students to identify environmental problems, formulate the proper questions, and design and execute appropriate solutions, taking into account scientific knowledge (and its limits), legal constraints, and the particular business and social context of the problem. The School also brings in environmental professionals from government, business, and non-profit organizations to ensure that students' professional development reflects the integration of rigorous academic training with a sound understanding of real-world environmental problems and the needs of clients. The training not only teaches students to tackle current environmental problems, but also fosters their capacity for long-range thinking and prepares them to meet new challenges as they arise.

Degree Requirements

Each student in the MESM program must complete a minimum of 74 units distributed among three curricular components. In most cases, students take more courses than necessary to meet the 74-unit requirement either to make

Patricia Holden

ASSISTANT PROFESSOR, DONALD BREN SCHOOL OF ENVIRONMENTAL SCIENCE & MANAGEMENT

The power of microbes captured assistant professor Patricia Holden's fascination when she was a graduate student pursuing a master's degree in engineering.

"I was an engineer working with a microbiologist. That experience sparked my interest in how microbes are such strong forces on our planet," she says. "What we can't see drives the functions we depend upon."

"What we can't see drives the functions we depend upon."

That fascination brought her to the Bren School of Environmental Science and Management, where she teaches courses in microbiology and environmental microbiology for engineers and biological treatment of waste.

"I try to teach my students how to think, to use information," she says. "And along the way I avail them of tools they can use for a long time and, I hope, improve upon."

Rather than just memorize facts, her students adopt a way of thinking about how to use the information they have and how to gather new information to solve the challenges and problems environmentalists will face in the future.

up for deficiencies in preparation, fulfill course prerequisites, or build greater depth in an area of study.

Core Courses: All students in the Master's program take a set of core courses to build an essential broad background. These are normally taken in the first year and currently include the following: *Ecological Principles, Environmental Biogeochemistry, Earth System Science, Economics of Environmental Management, Environmental Law and Policy, Management of Business Organizations, Environmental Statistics and Data Analysis.*

Specialization: The broad understanding provided by the core classes is complemented by an in-depth specialization in an area of environmental science and management. Students choose from one of the following specializations: *Water Resource Management, Pollution and Waste Management, Marine Resource Management, Population and Ecosystem Management, Government & Corporate Environmental Management, Management of Public Environmental Resources, Environmental Information Management.* With guidance from their faculty advisors, students design an individual program of study (POS) of at least 34 units that is appropriate for the chosen specialization and their particular backgrounds and goals. The POS should prepare students to knowledgeably approach a particular set of environmental issues from all of the relevant perspectives. Students are encouraged to include courses from other departments in their POS as appropriate.

Master's Group Project: All students pursuing the Master's of Environmental Science and Management (MESM) must successfully complete a three-quarter capstone Group Project that serves as the master's thesis. Students obtain 11 units for their Group Project by enrolling in ESM 401 A, B, & C. Students begin the sequence in spring quarter of their first year. Students work as a team in groups of 4-7 to conduct a comprehensive analysis of an environmental problem that contains both scientific and management challenges to produce a tangible and useful product. Written and oral quarterly progress reports are required. At the end of the final quarter, each group must submit a report acceptable for archiving in the UCSB library and give a formal, public presentation on their project. Projects involving partnerships or links with the public sectors, business community, or non-profit organizations are particularly desirable.

Doctor of Philosophy—Environmental Science and Management

The Bren School's Ph.D. program, initiated in fall 1998, aims to preserve the School's mission of training high-caliber future research professors while simultaneously meeting the urgent need for trained personnel in the public and private sector to solve the world's growing environmental problems. The cornerstone of the doctoral degree is an original work of research presented as a dissertation that focuses on the diagnosis, assessment, mitigation, remediation, and/or prevention of environmental problems of today and in the future. The program is designed to accommodate a wide range of research interests, from those highly focused in a particular discipline to those that are strongly interdisciplinary.

Degree Requirements

The Ph.D. program requirements are highly individualized. Upon entering the program students form an initial advisory committee of at least two Bren faculty members. The student prepares a program of study during the first quarter to be reviewed by the advisory committee. The committee may recommend additional courses to cover expected research needs, specific technical subjects needed for the research topic, increased depth in a particular area, or to provide additional breadth. Additional courses may include some of the core courses for the Master's program as deemed necessary for the research focus, as well as advanced Bren courses or courses from other departments in the particular area(s) of specialization. There is no specific unit requirement for the Ph.D. and no foreign language will be required except for students focusing on the international arena or a non-English speaking country.

Ph.D. students must form a Ph.D. committee by the end of the spring quarter of the first year of study. This committee is composed of at least three members of the University of California Academic Senate. The committee must include at least two members from the Bren School faculty; at least one member must have a greater than 0% appointment. The committee chair must be a member of the Bren School faculty. The committee may include more than three members, and it may include member(s) outside the UC Academic Senate knowledgeable in the research subject matter. The Bren School faculty as a whole approve the composition of the Ph.D. committee and review each Ph.D. student's progress during each Fall quarter.

Normally, at the end of the second year of study, and under no circumstances later than June of the third year, the Ph.D. committee prepares a written examination that tests the student's knowledge of his/her specialization in the context of the field of Environmental Science and Management. No later than six months after passing the written examination, the student prepares a written dissertation proposal and applies for admission to Ph.D. candidacy. The Ph.D. committee conducts an oral examination on the dissertation proposal, the student's readiness to do research, and the student's preparation and aptitude for completion of the Ph.D. Upon completion of the doctoral dissertation to the satisfaction of the student's Ph.D. committee, the student gives a public lecture on the dissertation followed by a closed-door defense of the dissertation before the Ph.D. committee. Students are expected to complete their dissertation defense no later than the end of their sixth year in the program.

Environmental Science and Management Courses

UPPER DIVISION

120. Microbiology for Engineers
(3) HOLDEN

Prerequisite: ESM 202 or upper-division standing in Mechanical or Chemical Engineering.

Introduction to microbiology and microbial ecology with emphasis on quantitatively describing microbial processes in natural and engineered systems. Applications of microbiology to environmental engineering will be emphasized.

151. Microeconomic Principles for Environmental Management
(3) STAFF

Prerequisites: Mathematics 3A-B-C.

Theory of the producer and consumer, demand and supply, choice under uncertainty, market equilibrium, welfare theorems and Pareto optimality, produce and consumer surplus and deadweight loss, welfare consequences of regulations, public goods and externalities, monopoly.

GRADUATE COURSES

200. Case Studies in Interdisciplinary Environmental Problem Solving
(1) STAFF

Examination of case studies illustrating that understanding, solving, and preventing environmental problems requires pooling expertise from multiple disciplines and constructive dialogue between diverse groups.

201. Ecological Principles
(4) KENDALL, DAVIS

Prerequisites: MCDB 4A; and, MCDB 4B or EEMB 4B.

Principles of individual ecology, population ecology, community ecology, and ecosystem ecology. Emphasis on applications (conservation, resource management, ecological effects of pollution and habitat fragmentation, etc.).

202. Environmental Biogeochemistry
(4) KELLER, MELACK

Prerequisites: Chemistry 1A-B-C; graduate standing in ESM.

Biogeochemical processes as applied to the earth's atmosphere, oceans, land and inland waters, and applications to environmental issues such as eutrophication, toxic pollution, carbon sequestration and acidification.

203. Earth System Science
(4) DUNNE, DOZIER

Prerequisite: Geography 3.

Energy and mass transport as applied to the atmosphere, oceans, and land and models of the Earth's climate and hydrology.

204. Economics of Environmental Management
(4) KOLSTAD, COSTELLO

Prerequisite: ESM 151.

Environmental regulation (incentives and command control), asymmetric information (cost revelation and auditing), regulatory incidence, dynamics and discounting, exhaustible and renewable resources, valuation, environmental macroeconomics, trade and the environment, comparative regulatory analysis.

205. Environmental Modeling
(4) MAHOWALD

Prerequisite: ESM 250.

Recommended preparation: knowledge of one high-level programming language.

Introduction to the development, use, and interpretation of models as applied to environmental problems.

206. Environmental Statistics and Data Analysis
(4) STAFF

Prerequisite: ESM 250.

Exploratory data analysis, multivariate inferential statistics, hypothesis testing, and experimental design.

207. Environmental Law and Policy
(4) STAFF

Basic elements of the legal system as it specifically relates to environmental issues. Study of the different stages and different institutions involved in environmental policy making.

209. Financial Management
(4) NISBET

An introduction to corporate financial management and reporting. Topics include the function of stock markets, discounted cash flows, investment appraisal, valuation of bonds and stocks, the capital structure decision, the accounting model, financial reporting to stockholders, and financial statement analysis.

210. Management of Business Organizations
(4) DELMAS

Focuses on the management of business organizations. Corporations face environmental and technological challenges of unprecedented proportions. Effective business management requires the understanding of environmental forces influencing companies as well as firm's internal organizational structure and processes.

211. Applied Population Ecology
(4) KENDALL

Prerequisite: ESM 201.

Examination of the application of population ecology to conservation of rare species and management of harvested populations. Topics include population regulation, population viability analysis, fisheries management, metapopulation dynamics, and population monitoring.

212. Biodiversity Inventory and Ecological Assessment
(4) DAVIS

Prerequisite: ESM 201.

Principles, criteria, and methods used to evaluate the ecological value of an area. Selection of evaluation criteria (e.g., species rarity, richness, and ecological representativeness) and spatial scales; as well as design, implementation, and analysis of inventory and assessment projects.

213. Ecological Effects of Pollutants
(4) SADINKSI

Prerequisites: ESM 201 and 202.

Case study-oriented course examining the effects of pollutants in natural and human-dominated ecosystems. Topics include identification and quantification methods, contaminant sources and effects, predictive methods and restoration.

214. Principles of Biological Mitigation and Remediation
(4) HOLDEN

Prerequisite: ESM 219.

Concepts and approaches to correct and alleviate the effects of environmental pollution using biological processes. Biochemical, ecological and physicochemical aspects of remediation and mitigation. Assessing and monitoring applicability/efficacy of biological treatment. Natural and engineered methods.

215. Landscape Ecology
(4) DAVIS

Prerequisite: ESM 201.

Relationships between spatial patterns in landscape structure (physical, biological, and cultural) and ecological processes. Role of ecosystem pattern in mass and energy transfers, disturbance regimes, and species' persistence, and applications of remote sensing and GIS for landscape characterization and modeling.

216. Conservation Biology
(4) ANDELMAN

Prerequisite: ESM 201.

Application of ecological principles to conserving biological diversity. Overview of extinction processes, the ecology of rarity, factors affecting the distribution of biological diversity, and ecosystem loss and fragmentation.

218. Environmental Biotechnology: Science, Economics, and Policy
(4) HOLDEN

Prerequisites: ESM 201, 202, and 204.

Current and future roles of biotechnology from scientific, economic and policy perspectives. Overview of science and common applications of biotechnology. Use of biotechnology in environmental preservation and restoration. Economic drivers and societal implications of biotechnology.

219. Environmental Microbiology
(4) HOLDEN

Prerequisite: Chemistry 1A; Mathematics 34A or 3A; and MCDB 4A.

Diversity, habitat, distribution, and processes of microbes in the environment.

221. Management of Air Quality
(4) KELLER

Prerequisite: ESM 222.

Processes involved in the generation, transport, and degradation of air pollutants. Application of numerical models to predict and manage air pollutant concentrations. Review of control devices for major processes that generate air pollutants.

222. Fate and Transport of Pollutants in the Environment
(4) KELLER

Prerequisite: ESM 202.

Transport and biogeochemical transformation of pollutants in the environment. Review of pollutant properties and media characteristics that affect transport, accumulation, and degradation of pollutants. Basic tools for managing pollutants in the environment, including prevention, detection, and remediation.

223. Management of Soil and Water Quality
(4) KELLER

Prerequisite: ESM 222.

Characterization of contaminated sites. Detection and sampling techniques. Risk assessment. Remediation and site management strategies: monitoring, containment, in-situ remediation, ex-situ treatment. Commercial software is used to evaluate sites and determine probable course of action based on risk analysis.

229. Introduction to Atmospheric Sciences
(4) MAHOWALD

Prerequisite: graduate standing.

Same course as Geography 266.

Fundamentals in atmospheric processes that are important for understanding the role of the atmosphere in earth's climate and biogeochemistry. Graduate-level introduction to radiation, dynamics, clouds, chemistry, and how they interact.

230. Atmospheric Chemistry
(4) MAHOWALD

Prerequisite: ESM 202.

Chemistry of the natural and human-modified atmosphere. Highlighting the chemistry of polluted urban areas, regional acid rain problems, and stratospheric ozone. Removal process, such as dry and wet deposition. Model simulation. Discussion of management approaches.

231. Global Climate and Climate Change: Science and Simulation
(4) MAHOWALD

Prerequisite: graduate standing in ESM.

Physics of the Earth's climate including radiation, atmospheric and ocean dynamics, and the hydrologic cycle. Interaction between subsystems. Climate simulation. Recent results from GCMs. Strengths and weaknesses of GCMs as a policy tool.

234. River Systems
(4) DUNNE

Prerequisite: ESM 203.

Not open for credit to students who have completed ESM 233A-B.

Hydrologic and geomorphic basis of environmental management problems concerning large river systems. Analysis of the processes of flooding, sedimentation, and morphological change in channels, floodplains, deltas, and alluvial fans. Effects of climate, land use, and engineering.

235. Watershed Analysis
(4) DUNNE

Prerequisite: ESM 203.

Hydrologic and geomorphic basis of environmental management problems concerning land surfaces and channels in small drainage basins, including the effects of land use and engineering. Emphasis placed on the use of theory and field methods.

236. The Mountain Snowpack
(3) DOZIER

Prerequisites: ESM 203, intermediate skiing ability, and consent of instructor.

Intensive field, laboratory and classroom study of physical processes in the mountain snow pack. Snow accumulation and ablation, metamorphism, physical and chemical properties, and remote sensing. Role of snow in watershed hydrology, water resources and recreation. Normally offered spring break.

241. Political Economy of the Environment
(4) STAFF

Critical examination of institutional advantages and disadvantages of current and alternative approaches to environmental regulatory policy and decision making. Conditions that led to current regulations as well as problems of forging new regulations.

242. Natural Resource Economics and Policy
(4) COSTELLO

Prerequisite: ESM 204.

Economic principles and policy issues of the use of exhaustible and renewable resources including fossil fuels, water, minerals, fisheries, forests, and biodiversity. Management of resource markets on regional and international scale.

243. Environmental Policy Analysis
(4) KOLSTAD

Prerequisites: ESM 204 and 245; graduate standing in ESM.

Assumptions, goals, content, and consequences of domestic and international policy related to the environment. Oriented toward quantitative analysis of policy.

244. Valuing Environmental Quality
(4) STAFF

Prerequisite: ESM 204.

Methods for valuing a variety of types of environmental goods, including pollution and natural environments. Approaches covered include hedonic prices, averting/defensive expenditure methods, travel cost, contingent valuation, and experimental markets.

245. Cost-Benefit Analysis
(4) BENTO

Prerequisite: ESM 204.

Complement to ESM 244 by comparing values for environmental costs and benefits of projects and policies. Case studies of ecosystem protection, pollution control, and other topics are used to illustrate analytical tools and address distributional aspects, discounting, uncertainty and other issues.

246. International Environmental Economics
(4) MCAUSLAND

Prerequisite: ESM 204.

Efficiency of government policies aimed at trans-jurisdictional environmental problems; links between environmental quality and patterns of international trade and investment; arguments for and against international harmonization of environmental policy: limitations placed on local environmental policy by World Trade Organization rules.

247. Environmental Politics and Policy in the Global Economy
(4) STAFF

Comparative and international dimensions of environmental politics and policy. National responses to environmental issues in both developed and developing nations, international environmental agreements, the globalization of environmental policies and politics and the relationship between trade policy and environmental policy.

248. Political Institutions and Environmental Policy
(4) STAFF

The relationship between major American political institutions and environmental regulatory policy. Politics associated with the origins of environmental regulatory policy, congressional and executive oversight, judicial review, administrative decision-making and rulemaking, and federalism.

249. Alternative Approaches to Environmental Policy
(4) STAFF

Prerequisite: ESM 248.

Alternative regulatory policies according to their cost effectiveness and fairness, demands on government, assurance of meeting goals, potential for pollution prevention and technological innovation, adaptability to change, and differential impact upon groups within society.

250. Analytical Methods for Environmental Problem Solving
(4) SIEGEL

Prerequisite: graduate standing in ESM.

Same course as Geography 210.

Introduction to analytical methods used to solve environmental problems. Topics include: calculus, linear algebra, vector analysis, and differential equations. Emphasis on proper documentation of problem statements and solutions.

256. Forested Land Management
(4) STAFF

Use of economic tools for managing forest land. Production of timber, production of market and non-market goods, issues of biodiversity/habitat conservation, carbon storage, and provision of recreation and amenity values. Policy applicability in developing countries. Case studies.

257. Ocean Resource Management
(4) STAFF

Prerequisites: ESM 201, 204, and 206.

A broadly based review of both living and mineral ocean resource management. Historic and developing state, federal and international management laws and regulations, principles of sustainability, and adaptive ecosystem management. Integrates human uses with case studies.

258. Marine Processes and Resources
(4) SIEGEL

Introduction to marine resources with emphasis on the oceanographic, climatic, biogeochemical, geological, and anthropogenic processes regulating marine resources off the California coast. Climate, ocean circulation, marine food web dynamics, and biogeography, fisheries, marine mammals, petroleum extraction, and marine population.

261. Management of Scientific Data
(4) FREW

Recommended preparation: basic computer literacy.

Theory, techniques, and tools for managing heterogenous scientific information. Database architectures and data models. Metadata standards and data characterization. Design and use of relational databases. Aspects of the science data life cycle: collection, storage, search, retrieval, analysis, presentation.

262. Distributed Scientific Information Systems
(4) FREW

Prerequisite: ESM 261.

Impacts of computer networks, both local and global, on scientific information. Architecture and implications of the World Wide Web. Electronic publishing and digital libraries. Theory, techniques, and tools for networked information discovery and retrieval.

263. Geographic Information Systems
(4) FREW

Prerequisites: ESM 261 and graduate standing in ESM.

Advanced introduction to geographic information system (GIS) theory and technology, emphasizing spatial analysis and cartographic presentation. Typical algorithms and data structures. Role of GIS in environmental information management. Integration of GIS with other analytical tools.

266. Remote Sensing of the Environment
(4) DOZIER

Prerequisites: ESM 203.

Advanced introduction to remote sensing theory, technology, and applications in environmental science and management. Survey of principles and analytical methods throughout the electromagnetic spectrum. Integration of remote sensing with other tools.

270. Conservation Planning
(4) DAVIS

Prerequisite: ESM 201.

Critical examination of the ecological and sociological dimensions of conservation planning both in the U.S. and abroad. Topis include land use planning, gap analysis, and reserve system design. Case studies will be used to illustrate recent developments in the use of mitigation land banks and Habitat Conservation Plans for conserving endangered species.

281. Corporate Environmental Management
(4) DELMAS

Prerequisite: ESM 210.

This course prepares students to use creatively conceptual tools and management strategies to improve the environmental performances of firms. Corporate, societal, and political barriers to implementing these innovative strategies will be analyzed and methods for overcoming these constraints discussed.

282. Industrial Ecology
(4) STAFF

Methods for evaluating the environmental performance of businesses, products, and processes are examined through case studies, including analyses of industrial material flows, energy flows, environmental performance metrics, life cycle assessments and design for environmental methodologies.

286. Environmental Risk: Assessment, Valuation, and Management
(4) AIGNER

Prerequisites: ESM 151, 206, and 210.

Recommended prepartation: Probability and statistics, microeconomics, finance, and accounting.

Fundamentals of statistical and organizational risk assessment, risk valuation, and risk management with a focus on environmental risk. Equips business managers with the tools required to bridge the gap between environmental compliance and environment as a strategic business issue.

290. Theoretical Hydrology
(4) DUNNE

Prerequisite: Ph.D. standing in ESM.

A review of the main theoretical principles that describe the current understanding of the hydrologic cycle.

291. Fluvial Geomorphology
(4) DUNNE

Prerequisite: Ph.D. standing in ESM.

Review of theoretical and empirical studies of landscape evolution by stream erosion and deposition. Hydraulic, sedimentological, and morphological characteristics of streams and valley floors.

292. Hillslope Geomorphology
(4) DUNNE

Prerequisite: Ph.D. standing in ESM .

Review of theoretical and empirical studies of hillslope evolution. Hydrologic and geotechnical aspects of hillslope erosion.

297. Advanced Special Topics in Environmental Policy
(2-4) STAFF

Advanced topics in environmental policy.

298. Case Studies in Environmental Science and Management
(4) DAVIS

Introduces MBA students to selected current environmental issues, the science behind them, and possible solutions. The format consists of three extended weekend sessions, each focusing on a different topical area of environmental science and management.

299. Advanced Special Topics in Environmental Science
(2-4) STAFF

May be repeated for credit for different topics.

Advanced topics in environmental science.

401A. Group Project in Environmental Science and Management
(3) STAFF

Group study of environmental problems with scientific and management challenges.

401B. Group Project in Environmental Science and Management
(4) STAFF

Group study of environmental problems with scientific and management challenges.

401C. Group Project in Environmental Science and Management
(4) STAFF

Group study of environmental problems with scientific and management challenges.

S95AA-ZZ. Group Studies
(2-4) STAFF

Prerequisite: graduate standing in ESM.

May be repeated for credit provided letter designations are different.

A. Hydrology/Geomorphology: Dozier; Dunne; Melack
B. Snow Science: Dozier
C. Environmental Biogeochemistry: Staff
D. Sustainable Development: Staff
E. Environmental Problems—Science and Solutions: Staff
F. Advances in Pollution Prevention: Keller
G. Advances in Applied Ecology: Davis, Kendall
H. Human Dominated Ecosystems: Melack
I. Oceanography: Siegel
J. Environmental Microbiology: Holden
K. Environmental Information: Frew
AA. Hydrology/Geomophology (PhD Level): Dunne
BB. Snow Science (PhD Level): Dozier
DD. Watershed Quality Management (PhD Level): Keller
JJ. Environmental Microbiology (PhD Level): Holden
MM. Environmental Management (PhD Level): Delmas

S96. Directed Readings and Research
(2-12) STAFF

Individualized reading and research. A written proposal for each tutorial must be approved by the school.

S97. Individual Study for Ph.D. Examinations
(1-12) STAFF

Prerequisite: graduate standing; consent of instructor and graduate advisor.

No unit credit allowed toward advanced degree.

Individual study for Ph.D. examinations. Instructor should be student's major professor or chair of the doctoral committee.

S99. Ph.D. Dissertation Research and Preparation
(1-12) STAFF

Prerequisite: graduate standing; consent of instructor and graduate advisor.

No credit allowed toward advanced degrees.

Research toward and writing of dissertation. Instructor should be chair of student's doctoral committee.

Graduate School of Education

Graduate School of Education, Phelps Hall 1190
GSE Student Affairs Office, (805) 893-2137
Credential Advisor, (805) 893-2084
Web site: www.education.ucsb.edu
Dean: Jules M. Zimmer
Assistant Dean: Carol N. Dixon
Chair, Department of Education: Charles Bazerman
Director, Teacher Education Program: To be announced

The activities of scholars and professionals in the Graduate School of Education are woven together by a common thread: a commitment to reshaping schooling from kindergarten through twelfth grade so that all children in our diverse society have knowledge and abilities to become competent and responsible citizens. The Graduate School of Education (GSE) goals are to produce and disseminate new theories and knowledge, and provide guidance and experience needed to allow our graduate students to reach their full potential as researchers and practitioners. Graduate students in the Graduate School of Education benefit from the wide range of faculty interests and research, and from opportunities to work closely with faculty to research and study in depth a chosen area of work.

The faculty, students, and staff of the Graduate School of Education are actively engaged in numerous K-12 and community-based research efforts, currently supported by nearly $3 million of extramural support. These research efforts are assisted by the Graduate School of Education Office of Research and provide financial support as well as training for GSE students.

The Graduate School of Education offers advanced degrees and credentials as indicated in the table in this chapter. A complete list of degrees and programs offered in the Graduate School of Education appears in the first chapter of this catalog, under the "Academic Units" heading. Program offerings are subject to available funding.

Graduate Student Association

The Graduate School of Education has an active Graduate Student Association in Education (GSAE) officially representing the "student voice" to the GSE and the UCSB community. It is a body where students work and meet together to address pertinent issues. In addition to addressing issues of an administrative, academic, or political nature, students involved in GSAE work to promote a positive "student life" in GSE, encouraging participation and mutual support among students. GSAE goals are to make participation in the GSE rewarding, challenging, and supportive; to be a representative, democratic, and participatory organization where decisions are made by consensus, where all members have a voice in decision making, and where the body represents all students' voices; to have a cooperative and open relationship with GSE faculty and staff, based on mutual respect; and to aid the GSE in its responsibility to recruit and support diverse and underrepresented populations.

Advising

The GSE Student Affairs Office provides assistance to all master's and doctoral candidates. Information may be obtained by calling (805) 893-2137. For information on the M.Ed. in Teaching, call (805) 893-2084.

The GSE credential advisor provides information to prospective applicants and students in credential programs. Those interested in pursuing a teaching credential at UCSB should contact the credential advisor as soon as they begin to consider the teaching profession. Information about pre-credential advising meetings for prospective elementary or secondary teachers may be obtained from the Teacher Education Office at (805) 893-2084.

Candidates who are pursuing both a credential and an advanced degree, other than the M.Ed. with an emphasis in Teaching, need to consult with both the GSE Student Affairs Office and credential advisor. Advanced credential applicants may be considered for any degree program in the Department of Education. Those interested in emphases other than a Multiple or Single subject credential should contact the GSE Student Affairs Office or to the degree emphasis in which they are most interested.

Prerequisites

Applicants must hold a bachelor's degree or its equivalent from an accredited institution and satisfy the admissions requirements of the UCSB Graduate Division. Some emphases require possession of a California teaching credential or its equivalent, and may require teaching or other appropriate experience.

Admission

All GSE programs require FALL quarter admission, except for the TEP M.Ed. and the Administrative Services Credential programs which require SUMMER admission. Applicants are advised to apply well in advance of the application deadline and should contact the Applications Coordinator for general admission requirements. Specific questions in regard to program/emphasis requirements and course offerings should be directed to the program office.

Applications and specific program/emphasis requirements may be obtained by contacting: Counseling/Clinical/School Psychology, (805) 893-3375; Program in Education, (805) 893-4515 or (805) 893-3936; Teacher Education Program, (805) 893-2084. Please refer to our Degree/Credential Programs section for specific information on application requirements for each program.

Applicants must submit the completed Application for Graduate Study, published by the Graduate Division, as well as the Departmental Application. Required application materials include a detailed statement of purpose, official transcripts, letters of recommendation, official Graduate Record Examination (GRE) scores (in some cases, results from the Miller's Analogies Test may be accepted), and program/emphasis-specific requirements. Admission to the Teacher Education Program requires a bachelor's degree, in an academic subject, from a regionally accredited institution.

Application Deadlines

Applications must be returned by the date established by Graduate Division:

- Counseling/Clinical/School Psychology Program – December 10th
- Education Program – December 15th for fellowship consideration (final application deadline for Education Program is May 1st)
- Teacher Education Program, ASC – February 1st

Research and Training Facilities

Graduate research and training opportunities are available through campus facilities as well as through federal and state funded faculty research grants administered by the Graduate School of Education Office of Research. Clinical training is offered through the Education Autism Clinic and the Ray E. Hosford Counseling Clinic. Qualitative and quantitative laboratories are available for research and instruction.

Education

Chair: Charles Bazerman

Faculty

Donald R. Atkinson, Ph.D., University of Wisconsin, Madison, Professor (counseling psychology)

Charles Bazerman, Ph.D., Brandeis University, Professor (teaching and learning, cultural perspectives of education, research methodology, English)

Larry E. Beutler, Ph. D., University of Nebraska, Professor (clinical psychology, psychology)

Julie Bianchini, Ph.D., Stanford University, Assistant Professor (teaching and learning, research methodology)

Sheridan Blau, Ph.D., Brandeis University, Senior Lecturer with Security of Employment (teaching and learning, English)

James H. Block, Ph.D., University of Chicago, Professor (educational leadership and organizations)

Mary E. Brenner, Ph.D., UC Irvine, Associate Professor (teaching and learning, cultural perspectives of education, research methodology, cognitive science, IHD)

Michael T. Brown, Ph.D., Southern Illinois University, Carbondale, Associate Professor (counseling psychology, research methodology)

J. Manuel Casas, Ph.D., Stanford University, Professor (counseling psychology, Asian-American studies)

Janet H. Chrispeels, Ed.D., University of San Diego, Associate Professor (educational leadership and organizations, teaching and learning)

Sharon C. Conley, Ph.D.,University of Michigan, Ann Arbor, Professor (educational leadership and organizations, research methodology)

Jenny Cook-Gumperz, Ph.D., University of London, Professor (teaching and learning, cultural perspectives of education, research methodology, LISO)

Willis D. Copeland, Ph.D., University of Notre Dame, Professor (teaching and learning, teacher education)

Merith A. Cosden, Ph.D., University of New Mexico, Professor, (clinical psychology, special education, disabilities and risk studies, IHD)

Carol N. Dixon, Ph.D., University of Delaware, Senior Lecturer with Security of Employment (teaching and learning, cultural perspectives of education, research methodology, LISO)

Richard P. Duran, Ph.D., UC Berkeley, Professor (teaching and learning, research methodology, cultural perspectives of education, teacher education, psychology, cognitive science, LISO, Chicano studies)

Michael J. Furlong, Ph.D., UC Santa Barbara, Professor, (school psychology, special education, disabilities and risk studies)

Michael M. Gerber, Ph.D., University of Virginia, Charlottesville, Professor (educational leadership and organizations, teacher education, cognitive science, IHD)

Naftaly S. Glasman, Ph.D., UC Berkeley, Professor (educational leadership and organizations, political science)

Judith L. Green, Ph.D., UC Berkeley, Professor (teaching and learning, research methodology, cultural perspectives of education, LISO)

Hsiu-Zu Ho, Ph.D., University of Colorado, Boulder, Associate Professor (child and adolescent development, research methodology, cultural perspectives of education, psychology, IHD)

Sehee Hong, Ph.D., Ohio State University, Assistant Professor (research methodology, psychology)

Cynthia Hudley, Ph.D., UC Los Angeles, Associate Professor (child and adolescent development, special education, disabilities and risk studies, teacher education, IHD)

Shane R. Jimerson, Ph.D., University of Minnesota, Assistant Professor (school psychology, child and adolescent development, IHD)

Gregory J. Kelly, Ph.D., Cornell University, Assistant Professor (teaching and learning, research methodology)

Robert Koegel, Ph.D., UC Los Angeles, Professor (clinical psychology, special education, disabilities and risk studies, speech, IHD)

Amelia Kyratzis, Ph.D., City University of New York, Assistant Professor (child and adolescent development, cultural perspectives of education, teaching and learning, cognitive science, IHD)

Gale M. Morrison, Ph.D., UC Riverside, Professor (school psychology, special education, disabilities and risk studies)

Susan A. Neufeldt, Ph.D., Stanford University, Lecturer/Supervisor (counseling/clinical/school psychology)

Yukari Okamoto, Ph.D., Stanford University, Associate Professor (child and adolescent development, teaching and learning, cultural perspectives of education, cognitive science, IHD)

Russell W. Rumberger, Ph.D., Stanford University, Professor (educational leadership and organizations, research methodology)

George H.S. Singer, Ph.D., University of Oregon, Eugene, Professor (special education, disabilities and risk studies)

Jon D. Snyder, Ed.D., Teachers College, Columbia University, Associate Professor (teaching and learning, teacher education)

Nolan Zane, Ph.D., University of Washington, Associate Professor, (clinical psychology, Asian American studies)

Jules M. Zimmer, Ed.D., Arizona State University, Professor (child and adolescent development)

Rebecca Zwick, Ph.D., UC Berkeley, Professor (research methodology, QMSS)

Emeriti Faculty

Norman J. Boyan, Ed.D., Harvard University, Professor Emeritus (education administration)

George I. Brown, Ed.D., Harvard University, Professor Emeritus (confluent education)

John W. Cotton, Ph.D., Indiana University, Professor Emeritus (educational psychology)

Priscilla A. Drum, Ph.D., Stanford University, Professor Emeritus (educational psychology)

Laurence Iannaccone, Ed.D., Teachers College, Columbia University, Professor Emeritus (confluent education, educational administration)

Ernest D. Michael, Ph.D., University of Illinois, Professor Emeritus (ergonomics, teacher education)

Ralph K. Nair, Ed.D., University of Missouri, Professor Emeritus (counseling psychology, teacher education)

Kermit A. Seefeld, Ed.D., Stanford University, Professor Emeritus (teacher education)

Melvyn I. Semmel, Ed.D., Peabody College, Vanderbilt University, Professor Emeritus (special education)

Stewart B. Shapiro, Ph.D., University of Southern California, Professor Emeritus (confluent education)

R. Murray Thomas, Ph.D., Stanford University, Professor Emeritus (international education)

Affiliated Faculty

Richard Mayer, Ph.D. (psychology)

Julian Weissglass, Ph.D. (mathematics)

Degree Credential Programs

The Department of Education offers two doctoral degrees: the doctor of philosophy in education; and the doctor of philosophy in counseling/clinical/school psychology, as well as a combined M.A./Ph.D. degree. Students admitted to an M.A./Ph.D. program may elect to exit the program with completion of the master's, except for the Ph.D. in Counseling/Clinical/School Psychology. Doctoral work emphasizing comparative or international education may be pursued as part of a concentration in some of the existing Ph.D. areas. The Ph.D. programs prepare highly capable individuals to perform as scholars and skilled professionals in their chosen fields.

The Department of Education also offers the master of arts and the master of education degrees in selected emphasis areas. Master's degree programs are designed to enhance academic and research competencies of elementary or secondary school teachers and other educational leaders. Previous teaching experience is required for some emphases. Advanced credentials may be pursued in addition to the master's degree in some emphases.

In addition to departmental requirements, candidates for graduate degrees and credentials must meet the University degree requirements found in the "Graduate Education at UCSB" chapter of this catalog.

DEGREES, EMPHASES, AND CREDENTIALS OFFERED

Program of Study	Program Objectives				
	Credential	*M.Ed.*	*M.A. in Education*	*Ph.D. in Education*	*Ph.D. in Counseling/ Clinical/School Psychology*
Counseling/Clinical/School Psychology School Psychology Program					
• Emphasis in Counseling Psychology					●
• Emphasis in Clinical Psychology					●
• Emphasis in School Psychology		●			●
• Pupil Personnel Services: School Psychology	●				
Education Program					
• Emphasis in Cultural Perspectives of Education			●	●	
• Emphasis in Child and Adolescent Development			●	●	
• Emphasis in Educational Leadership & Organizations			●	●	
• Emphasis in Research Methodology			●	●	
• Emphasis in Special Education, Disabilities and Risk Studies			●	●	
• Emphasis in Teaching and Learning			●	●	
• Administrative Services Credential–Preliminary	●				
• Administrative Services Credential–Professional	●				
Teacher Education Program					
• Multiple Subject[1]	●	●			
• Multiple Subject with CLAD Emphasis[1]	●	●			
• Multiple Subject with BCLAD Emphasis[1]	●	●			
• Single Subject in Math, English, Science, or Social Science[2]	●	●			
• Single Subject in Math, English, Science, or Social Science CLAD Emphasis[2]	●	●			
• Single Subject in Math, English, Science, or Social Science BCLAD Emphasis[2]	●	●			

1 May be pursued in conjunction with M.Ed. in Teaching
2 Science specializations include: Geoscience, Biology, Chemistry, or Physics

Degree Requirements

Students must achieve a grade-point average of 3.0 to be awarded a graduate degree. There is no language requirement. However, when advisors deem it suitable for a candidate's field of study, an appropriate level of foreign language competency may be required.

After completion of coursework, M.A. and M.Ed. candidates are expected to take a final comprehensive examination or to complete a thesis. M.A. and M.Ed. candidates must complete 30 or more units of upper-division and graduate level course work (with a minimum of 20 graduate units) under the thesis option, or 36-48 units of upper-division and graduate level course work (with a minimum of 24 graduate units) under the comprehensive exam option. Independent study units numbered 597-599 are ineligible to be counted in these totals. Students admitted to the M.A./Ph.D. are periodically evaluated for their readiness to progress to the Ph.D. level of study. Continuation is based on success in the master's program, suitability of goals, and anticipated success in the Ph.D. program.

No specific total number of course units is prescribed for a doctoral degree. Particular requirements will be made by faculty advisors in cases where students need specialized skills in foreign language or other areas. Doctoral students must pass qualifying examinations to be advanced to candidacy. Doctoral candidates must conduct original research and write an acceptable dissertation to be awarded the Ph.D.

Residence Requirements

Three quarters of registration are required for the master's degree. Two quarters of enrollment in the UCSB summer session can be used to count toward one regular quarter of registration for the master's, but not for the Ph.D. The minimum residence requirement for the Ph.D. is two years spent in full-time study and research. A minimum of three consecutive quarters of residency must be completed in regular sessions before advancement to candidacy.

Counseling/Clinical/School Psychology Program

The Counseling/Clinical/School Psychology Program offers courses of study leading to the Ph.D. with an emphasis in either counseling psychology, clinical psychology, or school psychology, or a master of education (M.Ed.) in education with an emphasis in school psychology. An M.A. or M.Ed. (non-terminal), open only to continuing CCSP students completing the Ph.D., is also available. Ph.D. students may also pursue an optional emphasis in human development (see below). The emphases in clinical psychology, counseling psychology, or school psychology, share knowledge bases and core skills. The UCSB Counseling/Clinical/School Psychology Program has been approved by the American Psychological Association (APA) since 1991. The Ph.D. program is designated and approved as a combined Counseling/Clinical/School Psychology program and follows a scientist-practitioner model of training. During the first year, students take a set of courses that are designed to provide basic preparation in these common domains. Beginning in the second year and increasingly thereafter, each student selects courses which comprise a specialization in either counseling, clinical, or school psychology.

Submission of a completed background questionnaire (sent with application materials) is required in addition to the regular application materials. Interviews will be scheduled for qualified applicants who meet admission criteria and have interests well suited to faculty interests. Alternatives to the interview may be arranged for those unable to attend due to excessive distance.

School Psychology Emphasis (M.Ed.)

Students pursuing a degree in education with an emphasis in school psychology focus upon the implications of research findings in psychology and education for psychological services primarily in school settings. The school psychologist is viewed as pivotal in the provision of comprehensive support services to teachers, students, and parents. Comprehensive support service includes prevention, assessment, and intervention programs for all children. A primary objective is to train school psychologists to enhance the learning and development of students and to assist those who are at risk or in need of special education services. Students are admitted to an M.Ed. degree in Education and may petition during their third quarter of residency to pursue courses leading to the Pupil Personnel Services credential with specialization in school psychology, approved by the California Commission on Teacher Credentialing. Students enrolled in other education programs may also petition to add this credential option, with admission contingent upon space availability.

The Program in Education

The Graduate Program in Education is built around an active community of scholars—students, faculty and staff—who are committed to the common goal of reshaping schooling so that all children in our diverse society will have the knowledge and abilities to become competent and productive citizens. Graduate students in the Program benefit from a wide range of faculty interests and research endeavors, and from opportunities to work closely with faculty to explore rigorously, through research and study, a chosen area of work.

The Education Program offers six different but complementary M.A. and Ph.D. emphases in the areas of research, development and practice.

Cultural Perspectives of Education Emphasis

The major purpose of this emphasis is to foster students' understanding of how cultural processes influence learning, development, and education in both school and non-school settings. The emphasis offers a multidisciplinary perspective that brings anthropological, linguistic, psychological, and sociological theories to studies of cultural contexts of education. Areas of specific focus include studies of learning, development, and education in multilingual and multicultural populations, and in students from underrepresented groups, within national and/or international settings. Through research, teaching, and community service, the members of this emphasis seek to improve educational opportunities at a local and national level.

Child and Adolescent Development Emphasis (ECAD)

The Child and Adolescent Development Emphasis focuses on age-related changes throughout the lifespan and their implications for education. Faculty are committed to a model of development spanning multiple settings (cultural groups, historical periods, neighborhoods, activities) to find commonalities as well as differences in human behavior. They are interested in the transactional relations among macrosocial, cultural, and biological influences on development. Issues of diversity—cross-cultural, cross-national, and gender—are a major focus of faculty research.

The core group of students will be grounded in theory and research on the major domains of study: cognitive, language, and social development. Students will be presented with a range and variety of theoretical perspectives on human development. However, students are also expected to look both beyond core requirements and outside of the Department of Education for additional training in research and theories that address their particular research interests.

Educational Leadership and Organizations (ELO) Emphasis

The primary purpose of this emphasis is to prepare students who will either assume leadership positions in educational organizations, work in government and non-profit agencies that conduct policy analysis and evaluation research, or who will teach and conduct research in institutions of higher education. Although most students enrolled in the emphasis are preparing for a career in educational administration, ELO stresses a balanced focus on disciplined-based theory, an understanding of education in its social and political context, and the ability to frame and conduct research. Consequently, in its curriculum, ELO combines an emphasis on the content knowledge and practical leadership skills that effective educational administrators need, with the theoretical grounding and research methods that will make them better problem-solvers and allow them to apply new ideas in their own organizational settings. At the same time, this curriculum prepares students who will take positions in academic or policy organizations because it provides them with strong research skills as well as an understanding of the "real world" circumstances that shape the policies and educational practices they study.

Opportunity to Combine ASC with M.A. or Ph.D. programs.

UCSB is unique among institutions in the Central Coast that offer students an opportunity to pursue both an ASC Credential and be enrolled in a first rate Ph.D. or M.A. degree program. See ASC program descriptions listed under Service Credentials.

Research Methodology Emphasis

This emphasis is intended to prepare students to be research methodologists who will be able to work successfully in universities, private research organizations, and government agencies. A goal of the Research Methodology emphasis is to provide students with a variety of perspectives on research methods.

The emphasis includes two basic courses of study: (1) Educational Statistics and Measurement, and (2) Qualitative and Interpretive Research. Students in Educational Statistics and Measurement will learn to apply statistical analyses to educational data, including large-scale student achievement surveys, and will learn to apply psychometric theory to the development of educational and psychological measurement instruments and to the analysis of test data. Students in Qualitative and Interpretive Research will learn about such research approaches as interviewing techniques, ethnographic methods, discourse analysis, narrative analysis, and participant observation. Students who specialize in Qualitative and Interpretive Research must also be accepted into another emphasis offered in the program.

Special Education, Disabilities and Risk Studies Emphasis

This emphasis is concerned with educating researchers and practitioners who will be knowledgeable, and further expand our knowledge, regarding the educational needs of students with disabilities or who are at educational risk. The program philosophy is that researchers and practitioners need a contextualized view of students, within their school, home, and community, to understand their individual needs as well as the needs of the systems which are serving them. In this emphasis, students will obtain a multi-disciplinary perspective on children with special needs and their schools, families, and communities, through the combined efforts and knowledge of professionals from a variety of disciplinary backgrounds. Graduate students will be grounded in theories of typical and atypical development.

Teaching and Learning Emphasis

The major purpose of this emphasis is to provide students with the knowledge and competencies to contribute to education in multiple roles, including teaching, conducting research, and using teaching and learning theories and empirical findings to improve educational practices (e.g., designing and evaluating curriculum, developing and researching theories and models of teacher education, researching teaching methods, evaluating theories of human activity in teaching and learning settings, understanding educational reform issues from multiple perspectives). Through research, teaching, and community service the members of this emphasis seek to improve educational opportunities at a local and national level. Current faculty research interests include Language, Literacy & Composition Studies; Mathematics Education; Science Education; and Teaching and Teacher Education.

International/Comparative Education Specialization

The international/comparative education specialization is supported by the Department of Education's doctoral emphases. Students enrolled in any doctoral emphasis can study international and comparative educational issues related to their primary emphasis.

Faculty expertise in the GSE determines the international/comparative specializations available. Faculty interests currently include Asia, Africa, and Latin America.

Teacher Education Program

The Graduate School of Education offers programs leading to the recommendation for the multiple subject (elementary) teaching credential (MST) and the single subject (secondary) teaching credential (SST). The single subject teaching credential is offered in English, Mathematics, Science, and Social Science. Both the multiple subject and single subject credentials are available with an optional emphasis in either the Crosscultural, Language, and Academic Development (CLAD) or Bilingual/Crosscultural, Language, and Academic Development (BCLAD) in Spanish. Both credentials are offered in conjunction with an optional master of education with an emphasis in teaching.

Admission to the Teacher Education Program requires a bachelor's degree in an academic subject from a regionally accredited institution. UCSB offers a large number of undergraduate majors that are appropriate preparation for teaching at the elementary and secondary school levels.

Students who wish to apply to the Teacher Education Program should contact (805) 893-2084 at least one year prior to when they wish to apply.

The professional preparation occurs during a post-baccalaureate year with teaching credential programs beginning only in summer. The program consists of a five-quarter (summer, fall through spring quarters, summer) progressive sequence of courses integrated with field experience in local schools. For those seeking BCLAD or CLAD Certification, the program may require further academic work. In addition to meeting the usual University standards of scholarship, candidates must clearly demonstrate their teaching aptitude and leadership abilities.

M.Ed. with Emphasis in Teaching

This emphasis focuses on the preparation of educational leaders for the teaching profession. Students who enroll in the M.Ed. with an emphasis in teaching must concurrently pursue a multiple subject (elementary) or single subject (secondary) teaching credential. (See "Admissions" above.)

Multiple Subject Teaching Credential

Prerequisites

The following prerequisites must be completed before beginning the teaching credential program.

a. Subject-matter competency in the subjects taught at the elementary level is required by either completing an approved multiple subject matter preparation program at the candidate's undergraduate institution or by attaining passing scores on the Multiple Subject Assessment for Teachers (MSAT) Exam.

b. Mathematics 100A-B (Mathematics for Elementary Teaching): These courses must be completed with a grade of C, Pass, or better.

c. U.S. Constitution: A three quarter-unit course or approved examination covering the provisions and principles of the United States Constitution is required. At UCSB, Political Science 12 meets this requirement. This course must be completed with a grade of C, Pass, or better.

d. Education 109 (Health Education): This course must be completed with a grade of C, Pass, or better.

e. Field experience: Applicants are required to complete a minimum of 80 hours of field experience in an elementary school. For more information contact the field placement coordinator in the Graduate School of Education.

f. CBEST: Candidates are required to take the California Basic Education Skills Test (CBEST) before beginning the credential program. Candidates must pass the exam to receive a credential from the state.

Single Subject Teaching Credential

Prerequisites

The following prerequisites must be completed before a student begins the teaching credential program.

a. Subject-matter competency in the teaching field is required. This is achieved by either completing an undergraduate single subject matter preparation program in the subject area at the candidate's undergraduate institution or by passing the PRAXIS II and SSAT state exams in the subject to be taught.

b. U.S. Constitution: A three quarter-unit course or approved examination covering the provisions and principles of the United States Constitution is required. At UCSB, Political Science 12 meets this requirement. This course must be completed with a grade of C, Pass, or better.

c. Education 109 (Health Education): This course must be completed with a grade of C, Pass, or better.

d. Field experience: Applicants are required to complete a minimum of 80 hours of field experience in a junior or senior high school. For more information contact the field placement coordinator in the Graduate School of Education.

e. CBEST: Candidates are required to take the California Basic Education Skills Test (CBEST) before beginning the credential program. Candidates must pass the exam to receive a credential from the state.

CLAD and BCLAD Emphasis

Candidates applying for the single subject or multiple subject teaching credential in combination with either the CLAD or BCLAD emphasis must fulfill all program requirements, including course prerequisites. BCLAD emphasis candidates must also pass the Spanish Language Exam. For additional information regarding the requirements for CLAD or BCLAD, please contact the Teacher Education Program.

Cynthia Hudley

ASSOCIATE PROFESSOR, EDUCATION

Associate professor Cynthia Hudley relies on her own experiences to illustrate her teaching and encourages students in her graduate courses to do the same. A former public school teacher, Hudley refers back to her days in the classroom to help her students develop skills in critical analysis and give them the tools for conducting, reading, understanding, and applying educational research. She teaches courses on children's social development, ethnic identity development, and achievement motivation.

"I hope my students will care deeply and apply their knowledge to improving outcomes for all children."

"I hope my students will gain the ability to think clearly about a broad range of topical issues, particularly those regarding ethnic minority children and their social interactions and how those children fare in school," she says. "Ultimately, I hope my students will care deeply and apply their knowledge to improving outcomes for all children."

Standards of Scholarship

During the teaching credential program, students must complete a minimum of 45 post-baccalaureate units. Students must earn the grade of B or better in all required courses for the credential. Students must maintain a cumulative grade-point average of at least 3.0 to remain in good standing and to be awarded graduate degrees at UCSB. Students with cumulative grade-point averages below 3.0 are subject to dismissal. In addition to state and program requirements, students in the Teacher Education Program must meet university requirements as described in the chapter "Graduate Education at UCSB."

Service Credentials

For additional information regarding the state certification and program requirements for the following service credientials, contact the Graduate School of Education credential advisor at (805) 893-2036. Applicants must have a degree in an academic subject from a regionally accredited institution.

Administrative Services Preliminary Credential – Tier I

The Preliminary Administrative Services Credential (ASC) is the first part of a two-stage credential program required for administrative service in California public schools. The fully accredited ASC program meets all state-mandated requirements and is designed to utilize the strengths of a major research university. Through coursework and practicum classes taught by faculty and local practitioners, students learn the latest in current research, are well grounded in theory and practice, and experience the "nuts and bolts" of school administration.

Administrative Services Professional Credential – Tier II

The Professional Administrative Services Credential (ASC) is the second part of a two-stage credential program required for administrators serving in California's public schools. UCSB's fully accredited Professional ASC Program meets the state-mandated requirements and provides a framework for professional dialogue, action research, and reflective practice, that will enable new administrators to sharpen their leadership and management knowledge and skills.

Pupil Personnel Services Credential

The pupil personnel services credential with specialization in school psychology is committed to a scientist-practitioner model of training in school psychology emphasizing the role of school psychologists as highly qualified practitioners and also as leader/innovators in comprehensive support services to schools.

Interdisciplinary Emphases

Optional Interdisciplinary Ph.D. Emphasis in Cognitive Science

Students pursing a Ph.D. in the Graduate School of Education may petition to add an emphasis in cognitive science. The interdisciplinary program in cognitive science involves faculty from the Ph.D. programs in anthropology, computer science, education, English, electrical and computer engineering, geography, linguistics, psychology and sociology. Its goal is to give students an appreciation of the interdisciplinary study of thinking, perception, and intelligent behavior, as determined jointly by the nature of the environment and by the internal architecture of the intelligent agent, whether human, animal, or machine. The program features a structured set of courses, which are taught individually and collaboratively by faculty from a variety of disciplines.

Students who petition to add the emphasis in cognitive science must fulfill the following requirements in addition to the requirements of the Ph. D. in their home department: (1) participation for at least three quarters in Proseminar Interdisciplinary 200; (2) completion of at least three cognitive science elective courses with one each in three different departments; (3) completion of either (a) a research project, completed before the dissertation, resulting in a publishable paper, or (b) an Extramural grant proposal for a study in cognitive science suitable for submission to an identified granting agency; (4) presentation of a research paper in a suitable academic forum, such as an emphasis or departmental colloquium, or a professional meeting; and (5) a Ph.D. dissertation centrally focused on a question emerging from cognitive science with at least two committee members representing faculty participating in the cognitive science interdisciplinary emphasis.

Optional Interdisciplinary Ph.D. Emphasis in Human Development (IHD)

Students pursuing a Ph.D. in this department may petition to add an interdisciplinary emphasis in human development. The Interdisciplinary Program in Human Development (IHD) involves faculty from the Ph.D. programs in communication, counseling/clinical/school psychology, education, linguistics, psychology, and sociology. The program focuses on developmental theory and research across the lifespan.

Students who petition to add the emphasis in human development must fulfill the following requirements in addition to the requirements for the Ph.D. in their home department: (1) six quarters of proseminar Interdisciplinary 592; (2) four courses in addition to the proseminar, two of which must be outside the student's home department; (3) a minimum of one member of the student's doctoral committee must be a ladder faculty member officially affiliated with the Interdisciplinary Program in Human Development. Consult the department for additional information.

Optional Interdisciplinary Ph.D. Emphasis in Language, Interaction and Social Organization (LISO)

Students pursuing a Ph.D. in the Departments of Education, Linguistics, or Sociology may petition the department to add an interdisciplinary emphasis in language, interaction, and social organization (LISO). This emphasis draws upon three approaches: interactional functional linguistics, ethnomethodology and conversational analysis, and interactional sociolinguistics.

In addition to the emphasis requirements, students must satisfy the requirements for the Ph.D. in their home department. Work in satisfaction of departmental Ph.D. requirements may also be used to satisfy emphasis requirements.

The emphasis requires one quarter of Sociology 212R, Introduction to the Analysis of Recorded Interaction, and four quarters of Linguistics/Sociology/Education 274, Proseminar in Language, Interaction, and Social Organization, for credit. Students must complete a minimum of three elective courses from the courses listed below. Two of the elective courses must be from the same department outside the student's home department; only one elective course may be in the student's home department: Linguistics 201, 209, 212, 214, 227, 228, 237, 260, or 266; Sociology 236, 236I, 236V, 242 (Note: Sociology 236 is prerequisite for the subsequent courses in the sociology series); Education 221B, 221C, 270G, or 270H. Students must complete a research project; the project must be supervised by at least one participating faculty member. This requirement can be satisfied in either of two ways: (a) Completion of a paper reporting a post-M.A. research project which presents an analysis of interactional data and displays command of the relevant literature. It must be written up in publishable form, though actual publication is not a requirement. (b) Successfully defend a dissertation centrally addressed to questions concerning language, interaction, and social organization; at least one member of the student's qualifying examination and dissertation committee must be a faculty member affiliated with LISO.

Questions or requests for additional information may be directed either to a participating faculty member or to LISO, c/o the Department of Sociology, UCSB, Santa Barbara, CA 93106-9430.

Optional Interdisciplinary Ph.D. Emphasis in Quantitative Methods for the Social Sciences (QMSS)

Students pursuing a Ph.D. in Education may petition to add an interdisciplinary emphasis in Quantitative Methods in the Social Sciences (QMSS). This new interdisciplinary emphasis involves faculty from the Ph.D. programs in Communication, Economics, Education, Geography, Political Science, Psychology, Sociology, and Statistics and Applied Probability. The areas of specialization of the participating faculty include advanced regression modeling techniques, multivariate statistics,

bootstrap estimation methods, demography, econometrics, psychometrics, social network theory, mathematical psychology, spatial statistics, survey research, and educational and psychological assessment. The QMSS emphasis helps students to attain the competencies needed to conduct quantitative social science research through core design and analysis classes, courses in advanced and specialized methodologies, and participation in interdisciplinary colloquia and research projects.

Each admitted student will develop, with his or her advisor, an individual contract listing the QMSS requirements to be completed. The contract must include the following:

- Two quarters of calculus, one quarter of linear algebra, and a one-year statistics sequence. Note: these requirements can be waived if equivalent courses have already been completed.
- Attendance for at least three quarters at the on-going QMSS seminar series, including the presentation of at least one paper.
- Completion of at least three quantitative methods courses (excluding those listed above), at least two of which are outside the students' home department.
- A Ph.D. dissertation that is centrally focussed on an issue that is appropriate to the QMSS emphasis. The dissertation may make a contribution to methodological theory or may involve an advanced or innovation application.
- A dissertation committee that includes at least one QMSS faculty member from outside the students' home department.

Education Courses

Note: A lab fee may be required for some courses.

UPPER DIVISION

109S. Health Education
(3) STAFF

Prerequisite: upper-division standing.

Applicants to the UCSB Credential Program have priority.

Lecturers introduce physiological, psychological and sociological factors that promote health and prevent disease including alcohol, narcotic, drug, and tobacco abuse; nutrition; chronic and infectious diseases; reproductive health and stress management. General educational applications are presented in lectures.

109SS. Health Education
(3) STAFF

Prerequisite: upper-division standing.

Applicants to the UCSB Credential Program have priority.

Lecturers introduce physiological, psychological and sociological factors that promote health and prevent disease including alcohol, narcotic, drug, and tobacco abuse; nutrition; chronic and infectious diseases; reproductive health and stress management. General educational applications are presented in lectures.

121. Techniques of Field Observation in School Settings
(2) STAFF

Prerequisites: prior experience in working with elementary or secondary ages in school settings with pre-professional volunteer track for at least one quarter. Junior or senior standing required. Consent of instructor. May be repeated for credit to a maximum of 4 units.

Consideration of methods for observation and interpretation of teaching/learning behaviors in elementary and secondary classrooms. Emphasis will be placed on utilizing observational techniques to develop an integrated knowledge of classroom phenomenon.

122. Practicum in Field Observation in School Settings
(1) STAFF

Prerequisites: Education 121 (may be taken concurrently); and consent of instructor.

May be repeated for credit to a maximum of 3 units.

Provides undergraduate students an opportunity to experience the real world of teaching, to examine themselves in the role of potential teacher, to develop first-hand knowledge of the school environment, and to render service.

123A. Perspectives on Culture
(2) SNYDER, HUDLEY-PAUL

Prerequisites: must be enrolled in the Multiple Subject Matter Preparation Program (MSPP) in Teacher Education. Consent of instructor.

This course develops self-awareness and understanding of the cultural influences in one's own background as a first step toward understanding the culturally diverse learner.

123B. Cultural Pluralism
(2) SNYDER, HUDLEY-PAUL

Prerequisites: Education 123A and consent of instructor.

This course adds to an understanding of culture; the influences of culture on roles, status, and communication; and working constructively with cultures other than one's own.

124. Research on Teaching and Learning in Sociocultural Contexts
(3) BRENNER, DURAN

Prerequisite: consent of instructor.

May be repeated for credit to a maximum of 9 units.

Introduction to theory and research on teaching and learning from a sociocultural perspective. Students will examine data and findings emanating from research projects grounded in the local community and schools.

125. Social Foundations of Education
(3) STAFF

Prerequisite: consent of instructor. Must have applied to the UCSB Credential Program.

A study of the relationship between school and society. Social and political influences on education historically and currently will be examined. Schools as complex organizations with unique roles will be studied.

132. Community Ethnography
(4) STAFF

Prerequisite: upper-division standing.

This course will examine how schools are situated in and related to the communities which surround them. Students will learn skills for understanding communities through course readings and field-based projects.

164. Introduction to Educational and Vocational Guidance
(3) STAFF

Prerequisite: upper-division standing.

An overview of the theories and concepts involved in career decision-making. Develop working knowledge of career information and field survey techniques for understanding the job market in relation to economic trends.

165. Introduction to Counseling Psychology
(3) STAFF

Prerequisite: upper-division standing.

The lab for this course, Education 165L, is optional.

This course is designed for those considering or beginning counseling psychology as a career. The scientific and clinical aspects of the field, along with the historical development and new directions in counseling psychology, will be covered.

165L. Introduction to Counseling Psychology Laboratory
(1) STAFF

Prerequisites: upper-division standing; concurrent enrollment in Education 165.

Optional laboratory course for Education 165.

173. Introduction to Leadership Development
(4) STAFF

Prerequisite: upper-division standing.

This course is an overview of theoretical constructs and practical applications of leadership. Through lectures, readings, discussions, and projects, the course will assist students in developing individual approaches to effective leadership.

175. Contemporary Special Education
(4) STAFF

Prerequisite: junior or senior standing.

A course in special education for undergraduate students and other non-majors covering the nature and needs of the handicapped pupil, special education programs and methods, contemporary social, legal, and educational issues.

176B. Practicum in Individual Differences
(2-4) GERBER

Prerequisites: Education 175; upper-division standing.

May be repeated for a maximum of 12 units.

Students work with individuals enrolled in the Educational Clinic of the Laboratory for Research in Individual Differences. Students develop skills in using behavior management and microcomputer technology for remediating learning problems in mathematics, reading, and language development.

199. Independent Studies
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in education; departmental approval.

Students must have a minimum 3.0 grade-point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Study of special problems in various fields of education.

199RA. Independent Research Assistance
(1-S) STAFF

Prerequisites: upper-division standing; completion of two upper-division courses in education; instructor and departmental approval.

Students must have a minimum 3.0 grade point average for the preceding three quarters and are limited to 5 units per quarter and 30 units total in all 98/99/198/199/199RA courses combined.

Coursework shall consist of faculty supervised research assistance.

GRADUATE COURSES

200. Research Methods in Education
(4) COPELAND, RUMBERGER

Basic principles of scientific methods exemplified by qualitative and quantitative research methods.

201A. Qualitative Research Design
(4) BRENNER, KELLY

Prerequisite: prior qualitative research methods courses or consent of instructor.

Writing a literature review, sampling, issues of quality, ethics, writing a research proposal and other topics relevant to designing qualitative research projects.

201B. Survey Research Design
(4) OKAMOTO, RUMBERGER

Prerequisite: consent of instructor.

The design of original surveys and the use of existing surveys in educational research. Topics include sampling, questionnaire construction, scales and coding, data management, and supplemental data from school records.

201C. Research Design and Methods in Professional Psychology
(4) BROWN, JANE

Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 277B. .

Examination of both clinical and statistical approaches to professional psychology research. Special attention devoted to conceptualizing and developing research proposals in the area of professional psychology.

201D. Single Case Experimental Design
(4) FURLONG, KOEGEL

Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 213A.

Students design and critique original single case experimental projects. The course covers the internal logic of each design; internal validity; external validity; development of reliable dependent measures and observational systems, as well as issues regarding social validity.

201E. Computer Analysis and Single Subject Design
(4) FURLONG, KOEGEL

Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 213B.

Topics related to the analysis of data generated through various single-subject research designs, including techniques of graphic representation, visual analysis, randomization analysis, meta analysis and time-series approaches.

201F. Issues in Research Methodology
(2) HU, HONG, ZWICK

Prerequisite: consent of instructor.

This course involves students in detailed and specific consideration of the methodological issues related to their own second year research projects, MA theses, or Ph.D. dissertations.

202A. Bilingual Language Development
(4) KYRATZIS

Prerequisite: consent of instructor.

This course describes theoretical and empirical accounts of the knowledge representations and psychological processes underlying language comprehension and production. Representative topics include discourse processing; conversational interaction; memory for words, sentences and text; metalinguistic skills; language development.

202B. Learning to Read and Learning from Reading
(4) STAFF

Research on acquisition of literacy and content learning in schools is examined from an information processing analyses of texts, characteristics of instruction, and individual differences within the learner.

202C. The Development of Writing Abilities
(4) BAZERMAN, BLAU

Prerequisite: consent of instructor.

Examination of the research literature on the development of writing competence in and outside of school from early childhood through advanced adult competence.

202D. Writing Across the Curriculum and in the Disciplines
(4) BAZERMAN, BLAU

Prerequisite: consent of instructor.

Examination of research literature in writing in disciplines and professions to consider the different dynamics, functions, and forms of writing in the separate areas and different paths of skill development and socialization. Consideration of findings at university and professional levels and their application to K-12 settings.

203A. Foundations of Education
(3) KOK

Prerequisite: admission to Single Subject Credential Program.

The application of psychological principles to the educative process, personality, and assessment. Other topics include discipline, design of instruction, and adolescent behavior and development.

203DW-DS. Applications of Computers to Educational Purposes—I
(2-2) COPELAND

Prerequisites: admission to Multiple Subject or Single Subject Teaching credential program, and consent of instructor.

In-progress course with grades for both courses given upon completion of Education 203DS.

Exploration of issues related to use of computer-based technologies in schools, including those of their access, use, and control in a democratic society; their use for development of problem solving, critical thinking, and creativity; and their integration into the school curriculum.

203EW-ES. Applications of Computers to Educational Purposes—II
(2-2) COPELAND

Prerequisites: admission to Multiple Subject or Single Subject Teaching credential program, and consent of instructor.

In-progress course with grades for both courses given upon completion of Education 203ES.

Exploration of issues related to use of computer-based technologies in schools, including those of their access, use, and control in a democratic society; their use for development of problem solving, critical thinking, and creativity; and their integration into the school curriculum.

205. Anthropological/Sociological Perspective on Education
(4) BRENNER, COOK-GUMPERZ

Prerequisite: consent of instructor.

Examination of anthropological and sociological approaches that have education as a central theoretical issue. Use of comparative perspective to explore a series of issues of relevance to U.S. education and to education in a variety of other countries.

206. Epistemology and Education
(4) KELLY

Prerequisite: consent of instructor.

Theories of knowledge are brought to bear on educational issues such as pedagogy, research traditions, and curricular legitimization. The course treats epistemological topics such as perception, objectivity, argumentation, rationality, theories, paradigms, and the aims of social science research.

207. Sociolinguistics in Education
(4) COOK-GUMPERA, DURAN

Prerequisite: consent of instructor.

Aspects of language as it functions in educational contexts. Topics include conversational analysis, non-verbal communication, direction following, children's understanding and use of language in social situations, functions of oral and written language, and sociocultural effects on communication styles.

208 Applied Rhetoric, Poetics, and Linguistics
(4) BLAU

Prerequisite: consent of instructor.

Examines current and seminal theory and research in the areas of literary criticism, rhetoric, composition, linguistics, and language acquisition as they apply to the teaching of English in grades 7-14.

209A. Seminar in Language Development
(4) KYRATZIS, OKAMOTO

Prerequisite: consent of instructor.

The course describes theoretical and empirical accounts of the development of the knowledge representations and psychological and social processes underlying language comprehension and use. Topics: grammatical and word meaning development, role of social-interactive routines, situational variation, child discourse, emergent literacy, relationships of oral/written discourse,. atypical language development and issues of culture and language.

209B. Seminar in Social Development.
(4) HUDLEY, JIMERSON

Prerequisite: consent of instructor.

Examination of theory and research on human social development from infancy to adolescence. Topics include family socialization, aggression and prosocial behavior, gender differences, peer and media influences, and social cognition.

209C. Seminar in Cognitive Development
(4) KYRATZIS, OKAMOTO

Prerequisite: consent of instructor.

Examination of current research and theories in cognitive development. Focus on young children's thinking. Special attention to biological and cultural influences on thinking as well as to implications of cognitive development research for education.

209E. Seminar in Human Development
(1-6) STAFF

Prerequisite: consent of instructor.

May be repeated for credit.

In-depth consideration of emerging topics in human development. Course content may vary.

209F. Gender Development and Socialization
(4) KYRATZIS

Prerequisite: consent of instructor.

Examines gender development and socialization, including the study of gender differences in cognition, emotion, language, and moral reasoning from infancy through adolescence.

210A. Human Memory and Cognitive Processes
(4) DURAN

Prerequisite: consent of instructor.

Survey of theoretical approaches and empirical findings in the areas of learning, memory, psycholinguistics, cognitive processing, and situated cognition. Topics include models of memory, information-processing and related experimental methodology and findings. Contemporary paradigm shifts in cognitive psychology also reviewed.

210B. Cognitive Development
(4) OKAMOTO

Prerequisite: consent of instructor.

This course presents a broad perspective of cognitive development and focuses on topics such as perception, problem solving, meta cognition, etc. The educational application of cognitive research will also be covered.

210C. Current Research in Cognitive Development
(4) OKAMOTO

Prerequisite: consent of instructor.

May be repeated for credit.

Examination of current issues in cognitive development. Recent works by leading scholars are read and discussed as potential ideas for research projects. Implications of cognitive developmental research for educational practice are of central concern.

210D. Seminar in Cultural Perspectives of Education
(1-6) STAFF

Prerequisite: consent of instructor.

May be repeated for credit.

In-depth consideration of emerging topics in cultural perspectives of education.

210E. Foundations of Sociocultural Learning Theory
(4) BAZERMAN, DURAN

Prerequisite: consent of instructor.

Examination of founding theoretical texts of sociocultural theory of learning in both Russia and the West and their application to current issues in education.

210F. Cultural Psychology: Contemporary Sociocultural Learning Theory
(4) BAZERMAN, DURAN

Prerequisite: consent of instructor.

An examination of contemporary developments in cultural psychology and applications to education and learning in diverse sociocultural settings.

210G. Crosscultural Psychology
(4) BROWN, HO

Prerequisite: consent of instructor.

Investigation of current issues in social and cognitive psychology with a crosscultural perspective.

211. Psychological Foundations of Education in the Elementary School
(3) STAFF
Prerequisites: admission to Multiple Subject Credential Program and consent of instructor.
Interdisciplinary approaches to theory and research on student behavior.

211A. Proseminar: Introduction to Human Development
(4) HUDLEY, JIMERSON, KYRATZIS, OKAMOTO
Prerequisite: consent of instructor.
Introduction to on-going research on human development pursued by education faculty. Emphasis on current theory and methods guiding research in human development.

211B. Development: Infancy and Early Childhood
(4) KYRATZIS, OKAMOTO, ZIMMER
Theoretical bases and empirical findings on the development of children from conception through pre-school age across various areas of competency; such as, social, language, moral, cognitive, and motor.

211C. Development: Middle Childhood to Adolescence
(4) HUDLEY, JIMERSON, OKAMOTO
Prerequisite: Education 211B.
Theoretical bases and empirical findings on the development of children from age six through adolescence across various areas of competency, such as, social, language, moral, cognitive, and motor.

211D. Development: Adolescence to Adulthood
(4) HUDLEY, JIMERSON
Prerequisite: consent of instructor.
Theory and research about development during adolescence. Discussion of transitions and adaptations during adolescence considering social development, cognitive development, personality development, biological development and important contexts of adolescent development (e.g. families, schools, peer groups, work and communities).

211E. Practicum in Human Development
(1-6) HUDLEY, JIMERSON, KYRATZIS, OKAMOTO
Prerequisite: consent of instructor.
Supervised field experiences in understanding the processes of human development and their implications for education. Students participate in activities that lead to independent research suitable for a masters' project.

212. Seminar: Quantitative Methods in the Social Science
(2) ZWICK
Prerequisite: consent of instructor.
May be repeated for credit.
Required course for students in the Interdisciplinary Quantitative Methods in the Social Science emphasis.

214A. Introductory Statistics
(4) BLOCK, BROWN, HO, OKAMOTO, RUMBERGER
Introduction to the application of descriptive and basic inferential statistics in educational research. Topics include experimental and survey design principles, measures of central tendency and variability, elementary probability concepts, basic hypothesis testing, and procedures for testing the difference between two means.

214B. Inferential Statistics
(4)HO, HONG, ZWICK
Prerequisite: Education 214A.
Hypothesis testing and interval estimation techniques for application to educational research. Includes bivariate correlation and regression, one-way analysis of variance, and elementary techniques for categorical data analysis.

214C. Linear Models for Data Analysis
(4) HONG, ZWICK
Prerequisite: consent of instructor.
Intermediate data analysis methods, all of which can be considered to be instances of a general linear model. Selected topics in multiple regression and analysis of variance (ANOVA), including regression with qualitative independent variables, logistic regression models, one-and two-way ANOVA models and analysis of covariance.

215A. Introduction to Testing and Measurement
(4) BROWN, COSDEN, DURAN
Prerequisite: consent of instructor.
Not open for credit to students who have completed Education 219A.
An introduction to testing and assessment in education and education-related fields. Topics include basic concepts and issues in testing and assessment, and professional standards for test development and test use. Elementary notions of test design, and evaluation of reliability of tests and assessments are introduced through hands-on activities.

215B. Psychometrics
(4) ZWICK
Prerequisite: consent of instructor.
Introduction to classical test theory and item response theory which provide tools for understanding and analyzing data from educational and psychological tests. Topics include test scoring, validity, reliability, test bias, and the development of tests and questionnaires.

215C. Psychometrics: Item Response Theory
(4) ZWICK
Prerequisite: Education 215B.
Introduction to item response theory (IRT), a class of mathematical models for test scores. Description of its application to practical problems such as test construction, test scoring, the design of computerized adaptive tests, and the assessment of differential item functioning (item bias). Students learn to use a computer program that performs IRT analyses.

215D. Special Topics in Psychometrics
(4) ZWICK
Prerequisite: consent of instructor.
Exploration of an advanced or specialized topic in psychometrics.

216A. Advanced Multivariate Statistics
(4) ZWICK
Prerequisite: Education 214A or 214B or 214C.
The theory and application of multivariate statistics, including multivariate analysis of variance, discriminant analysis, and canonical correlation. Instruction in the necessary matrix algebra will be provided.

216B. Factor Analysis
(4) ZWICK
Prerequisites: Education 214A-B-C.
The theory and application of exploratory and confirmatory factor analysis models.

216C. Hierarchical Linear Models
(4) RUMBERGER
Prerequisite: consent of instructor.
Many educational phenomena operate at multiple levels, such as the effects of school characteristics on student achievement. This course introduces students to statistical techniques for estimating linear models involving multilevel data, including time periods, individuals, and institutions.

216D. Seminar in Quantitative Research Methods
(4) HO, HONG, ZWICK
Prerequisite: consent of instructor.
Exploration of an advanced or specialized topic in statistics or research methodology.

216E. Nonparametric Statistics
(4) ZWICK
Prerequisite: Education 214A and 214B.
Analysis of data using techniques that are appropriate when assumptions of traditional normal-theory statistical procedures are not met. Includes the Wilcoxon and Kruskal-Wallis tests, Spearman Correlation, Kendall's Tau, and methods for the analysis of frequency data.

216F. Structural Equation Models
(4) HONG
Prerequisite: Education 214A-B-C.
The theory and application of structural equation modeling (also called analysis of covariance structures).

218A. Professional Organizations
(1) ATKINSON
Prerequisite: consent of instructor.
This course explores issues related to professional training and practice in scientific-professional psychology. Topics include internship, graduate training models, history of scientific-professional psychology, professional organizations, credentialing, licensure and employment settings.

218B. Descriptive Diagnosis
(1) BEUTLER
Prerequisite: consent of instructor.
This course continues with topics covered in Education 218A related to professional training and practice in applied psychology.

218C. Gender Issues
(1) ATKINSON
Prerequisite: consent of instructor.
This is the third course in a sequence. This course will explore gender and sexual differences in the application of psychotherapy and counseling procedures.

218D. Sex Therapy
(1) BEUTLER
Prerequisite: consent of instructor.
This is the fourth course in a sequence and will introduce the concepts of sex therapy. This course is designed to meet the requirements for California State licensure of psychologists.

218E. Alcohol and Other Drug Abuse
(1) BEUTLER
Prerequisite: consent of instructor.
This is the fifth course in a sequence and will address drug and alcohol abuse. The course is designed to meet the requirements for licensure as a psychologist in the state of California.

218F. Family Violence
(1) ATKINSON
Prerequisite: consent of instructor.
This is the sixth course in a sequence. This course is devoted to explorations of family violence and its treatment. It will include an exploration of child abuse, elder abuse, spouse abuse, and will include discussions of emotional and physical and sexual abuse.

219B. Research on Classroom Teaching
(4) COPELAND, GREEN
Prerequisite: consent of instructor.
Introduction to various genre of research that have attempted to understand and improve classroom teaching over the past thirty years. Exploration of contemporary research programs and their results.

219C. Motivating Students
(4) BLOCK
An exploration of contemporary school motivation theory. Emphasis is placed on modern cognitive and effective theories of intrinsic motivation: attribution, ability, achievement, self-worth, flow, and self-determination.

221A. Introduction to Qualitative Research Methods
(4) COOK-GUMPERZ, KELLY
Prerequisite: consent of instructor.
An overview of qualitative research methods; focus on study of techniques for data collection and analysis within various disciplinary perspectives; student participation in field research methods. Introduction to qualitative data analysis programs.

221B. Qualitative Interviewing
(4) BRENNER, COOK-GUMPERZ
Prerequisite: Education 221A.
Qualitative interviewing methods including ethnographic interviews, life histories, cognitive maps and think-a-loud interviews. How to conduct interviews with different kinds of informants.

221C. Observation in Small Group Analysis
(4) COOK-GUMPERZ, CONLEY
Prerequisite: consent of instructor.
Observational methods and small group analysis constitute the backbone of qualitative research and have a long research history. This course provides some insight into the range of methods and techniques available, and explores the thinking that has shaped the individual methods. Issues that different methods were designed to deal with, research agendas that developed as a result, and implications these have for social research in educational settings are also discussed.

221D. Classroom Ethnography
(4) DIXON, GREEN
Prerequisite: consent of instructor.
Examination of the pre-fieldwork and fieldwork phases of ethnography in school and classroom settings including issues of entry and access, theoretical frameworks, indexing data, and processes of data collection and analysis.

221E. Analyzing Ethnographic and Sociolinguistic Data
(4) DIXON, GREEN
Prerequisite: consent of instructor.
Examination of ways of analyzing classroom ethnography data, socioloinguistic and ethnographic approaches to data analysis, and issues in data analysis. Involves participants in data analysis of a common data set.

221F. Community Ethnography
(4) BRENNER, GREEN
Prerequisite: Education 221A.
How to carry out ethnographic research in order to explore the relationship between schools, families, and communities.

221G. Textual Analysis
(4) BAZERMAN, BLAU
Prerequisite: consent of instructor.
Methods of examining texts, their form, their contents, and their functions in relation to the operations of educational organizations and to teaching and learning in classrooms. Special attention to student research projects.

222A. Introduction to Exceptional Children
(4) GERBER, SINGER
An overview of the historical, social, and legislative foundations of the education of the exceptional pupil. Survey of the range and nature of disabilities requiring special education.

222B. Academic and Cognitive Characteristics of Students with Mild Disabilities
(4) GERBER, MORRISON
Prerequisite: consent of instructor.
Study of the academic and cognitive characteristics of children who are at risk or have mild disabilities. Interventions for these students will also be covered.

222C. Social and Affective Characteristics of Students with Mild Disabilities
(4) COSDEN, HUDLEY
Prerequisite: consent of instructor.
Study of the affective and social characteristics of children who are at risk or have mild disabilities. Interventions for these students will also be covered.

222D. History and Philosophy of Exceptional and At-Risk Learners
(4) GERBER, SINGER
Prerequisite: consent of instructor.
The history and philosophy of exceptional learners and at-risk students.

223B. Instructional Methods and Classroom Management for Handicapped Pupils
(4) STAFF
Prerequisite: Education 222A; concurrent enrollment in Education 229A.
Fieldwork will be correlated with course content.
Implementation of individual educational programs, instructional management, selection modification of curriculum, and techniques of behavior management.

223E. Psycho-Educational Assessment and Evaluation of Handicapped Children
(4) FURLONG
Prerequisite: consent of instructor.
Methods of psycho-educational assessment and evaluation for identification, planning, placement, and review of progress of handicapped children in the public schools. Includes consideration of screening and diagnostic instruments and procedures, as well as instruments and materials to assure nondiscriminatory assessment.

223H. Individual Differences and the Administrator
(4) GERBER
Prerequisite: consent of instructor.
Legal requirements and instructional leadership responsibilities of administrators who deal with special populations in educational settings. Includes consideration of resource allocations, provision of procedural safeguards to parents and initiation of innovations in organizing and administering special programs in the schools.

224A. Discourse Analysis in Educational Settings
(4) DIXON, GREEN
Prerequisite: consent of instructor.
Examination of the nature of discourse, linguistic constructs and how they apply to the study of discourse in educational settings and issues in transcribing and analyzing classroom talk.

224B. Narrative Analysis
(4) COOK-GUMPERZ, KYRATZIS
Prerequisite: consent of instructor.
Linguistic/stylistic and thematic/content analyses, and structural approaches to the classic narrative theory. Exploration of how narratives are used to shape personal shared reality and social relationships; the power of narrative; how narratives are embedded in conversations; and differences in narrative across gender and culture.

225E. Social Foundations of Education/ Elementary
(3) STAFF
Prerequisites: admission to the Elementary Credential Program in Education. Consent of instructor.
Not open to students who have completed Sociology 164 or Education 125.
A study of the relationship between school and society. Social and political influences on education, historically and currently, will be examined. Schools as a complex organization with unique roles will be studied.

225SW-SS. Social Foundations of Education/Secondary
(2-1) STAFF
Prerequisites: admission to the Secondary Credential Program in Education; consent of instructor.
Not open for credit to students who have completed Sociology 164 or Education 125. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Education 225SS.
A study of the relationship between school and society. Examination of social and political influences of education, historically and currently. Study of schools as a complex organization with unique roles.

226A. Early Childhood Learning and Development
(4) STAFF
Prerequisite: consent of instructor.
Course focuses on learning and developmental concepts concerning children from birth to 11 years of age. Theories acquired are placed within a context of home and school. There will be a special emphasis on Piagetian theory.

226B. Semiotic Functions: Play, Dreams, and Imitation in Early Childhood
(4) STAFF
Prerequisite: consent of instructor.
The course is designed to explore the role of play, dreams, and imitation as mechanisims for conceptual understanding and as their function in representation.

226C. Socialization in Early Childhood
(4) STAFF
Prerequisite: consent of instructor.
This course explores how preschool and early elementary school children are socialized as learners, how they feel about themselves and how they relate to others. Influences of culture, family, and individual characteristics will be examined.

228A. Learners with Severe Disabilities: Functional Skills Instruction
(4) MORRISON, SINGER
Prerequisite: consent of instructor.
Learning and motivational characteristics, assessments for screening, diagnosis, instructional planning, and functional analysis of behavioral problems. Procedures for teaching functional skills and recent research are covered.

228B. Learners with Severe Disabilities: Communication
(4) MORRISON, SINGER
Prerequisite: consent of instructor.
Teaching and research on instruction of communication and language competence and social competence. Research theory, and instructional practice are covered. The course is designed for masters and doctoral students.

228C. Learners with Severe Disabilities: Functional Academics and Inclusion
(4) MORRISON, SINGER
Prerequisite: consent of instructor.
Functional academics and social academic as well as managerial aspects of inclusion. Along with practical skills, students learn key theories and review recent research on social and academic inclusion.

228D. Direct Instruction and Strategy Instruction
(4) SINGER
Prerequisite: consent of instructor.
Theory, practice, effectiveness, and controversy. Two of the major research-based approaches to teaching academic skills to students with learning disabilities are covered.

228E. Families and Disabilities
(4) COSDEN, SINGER
Prerequisite: consent of instructor.
An overview of theories about the family, contemporary research regarding family issues, and home-school interactions. Designed for doctoral students who are interested in research and masters students who want to learn practical school-related methods.

228F. Topics in Family and Disability Research
(4) COSDEN, SINGER
Prerequisite: consent of instructor.
Focus on one important aspect of family life among families of children with disabilities. Research study on selected topics. Best suited for doctoral students.

228G. Interventions with Families and Children with Disabilities
(4) COSDEN, SINGER
Prerequisite: consent of instructor.
Theory and methods for supporting families of children with disabilities through the lifespan. Topics include theory and methods of behavioral family therapy, providing information about disabilities, stress management, support groups, and self-help organizations.

229C. Practicum in Special Education Programs for Severely Handicapped Pupils
(2-12) STAFF
Prerequisite: consent of instructor.
Supervised field-based practicum in instruction and management of special education programs for severely handicapped pupils.

230. Developmental and Remedial Reading
(4) STAFF
Prerequisite: consent of instructor.

A course for the classroom teacher and the specialized reading teacher, emphasizing practical, innovative techniques in the reading program. Offered summer session only.

231A-B-C-D. Developmental and Remedial Reading Laboratory
(1-4, 1-4, 1-4, 1-4) STAFF
Prerequisite: admission to the MA in reading or consent of instructor.

An advanced course in developmental and remedial reading. A practical laboratory experience. Students will learn to implement instructional programs with remedial and developmental reading students.

232A. Reading Diagnosis
(4) STAFF
Prerequisite: consent of instructor.

First course in reading diagnosis. Course emphasizes the selection and implementation of diagnostic practices and prescription in both developmental and remedial reading programs.

232B. Advanced Reading Diagnosis
(4) STAFF
Prerequisite: Education 232A.

Second course in reading diagnosis and prescription intended for the person organizing and implementing developmental and remedial programs in the schools.

233W-S. The Roles of a Reading Specialist
(2-2) STAFF
Prerequisite: consent of instructor.

A two quarter in progress sequence course with grades for both quarters issued upon completion of 233S.

Seminar discussions examine (among others) roles of reading specialists as curriculum designer, program evaluator, change agent, and proposal writer. Major project will involve evaluation of a schoolwide reading program.

234. Linguistics for Teachers
(4) STAFF

Linguistic theory and its applications to the teaching of language and reading skills. The course will survey topics in phonetics, syntax, semantics, and pragmatics.

236A-B-C. Seminar in Action Research Methodology and Practice
(4-4-4) CHRISPEELS, CONLEY, RUMBERGER
Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 249B.

Examination of action research as a way to address educational and social issues and as an attitude toward learning and action by engaging students in collective and individual action research cycles to improve practice. Course sequence meets fieldwork requirements for ASC Tier II and is a research methodology option for Teaching and Learning Ed. Psych. M.A. students.

237B. Labor Relations and School Law
(4) STAFF
Prerequisite: consent of instructor.

Study of legal/substantive issues, cases, negotiation problems, dispute settlement techniques, and private/public sector comparison. Study of school law history including significant cases; education, administrative, welfare, institutional, and other relevant codes; and opinions of courts, attorney general, and county counsel.

238. Children's Literature
(4) STAFF
Prerequisite: consent of instructor.

Topics include the development of tastes and interests, values and attitudes; standards for the creating of children's literature; bibliotherapy—the problems approach; individualized reading—balancing the diet; interrelationships with total curriculum; experimenting with children's literature. (Offered in Summer Session only.)

240A. Education Policy
(4) STAFF
Prerequisite: consent of instructor.

An introduction to education policy that will examine both the process of education policy and a series of substantive issues that are commonly the focus of education policy at the state and federal levels.

240B. Economic Analysis and Education Policy
(4) STAFF
Prerequisite: Education 240A.

This course will examine the use of economic theory and concepts, i.e., human capital theory, public finance, and cost-effectiveness evaluation, as a basis for understanding and solving a variety of current education policy problems.

240C. Advanced Seminar in Educational Policy
(4) STAFF
Prerequisite: consent of instructor.

An in-depth analysis of literature and topics in various areas of education policy. Topics will be geared to particular student interests.

240D. Seminar in Higher Education Research and Policy
(4) STAFF
Prerequisite: consent of instructor.

This course addresses current research and policy issues in higher education.

241A. Politics of Education
(4) STAFF
Prerequisite: consent of instructor.

Same course as Political Science 295.

Examination of the relationship between politics and education in a democratic society. Focus on the role of politics in defining the public purposes of education, determining its content and distribution, and in holding educators accountable to the larger body politic.

241B. Politics of Education
(4) STAFF
Prerequisite: consent of instructor.

A systematic examination of governance and politics of education in local, state, national, and international contexts. Emphasis is placed on various processes and mechanisms of politicization of educational governance.

242A. Organizational Theories
(4) CONLEY
Prerequisite: consent of instructor.

Survey of prominent theories about how organizations function, how and why some organizations flourish while others might flounder, how organizations encourage as well as discourage innovation and creativity, and how different theories project different realities about organizations.

242B. Models of Work Behavior
(4) CONLEY, BROWN
Prerequisite: consent of instructor.

Examination of models of work behavior related to human resource strategies and affective reactions to work (e.g., stress, job satisfaction, organizational commitment) in organizations. Course content should be useful to students interested in leadership, management and organizational behavior.

242C. Theories of Organizational Change and Development
(4) CHRISPEELS
Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 261B.

An overview of organizational change and development theories, with special focus on the concepts of organizational complexity and learning and the problems of change. Students analyze and apply theories through class papers and projects.

242D. School Reform
(4) BLOCK
Prerequisite: consent of instructor.

Not open for credit to students who have completed Education 255C.

In-depth examination of contemporary trends in schooling with special emphasis on current literature on effective schooling, mastery learning, and school reform.

243. The School Administrator and Supervisory Practice
(4) GLASMAN
Prerequisite: consent of instructor.

The role of the school administrator through theoretical and practical contexts will be explored.

244. Organizations and Interpersonal Relations
(4) STAFF
Prerequisite: consent of instructor.

Theoretical and experiential course on "human side of management." Applies knowledge of intergroup relations (e.g. cooperation, competition, the "isms") to organizations. Emphasizes the effects on interpersonal relations of various organizational and identity group memberships of individuals.

245A. Educational Finance
(4) GLASMAN
Prerequisite: consent of instructor.

An introduction to the financing of education at the school, district, county, state, and federal levels. Emphasis will be given to the economic foundations of school financing.

246A. Evaluation in Educational Administration
(4) GLASMAN
Prerequisite: consent of instructor.

Educational evaluation is examined as an executive function. Emphasis is on practices, models, and studies of program and personnel evaluation and the integration of educational evaluation within the context of educational decision making.

246C. Testing Students
(4) BLOCK
Prerequisite: consent of instructor.

Introduction to student testing with special emphasis on three major schools—measurement, evaluation, assessment.

247A. Educational Leadership
(4) GLASMAN
Prerequisite: consent of instructor.

Systematic analysis of the antecedents and consequences of administrator behavior in a variety of educational settings.

247B. Advanced Seminar in Administrator Behavior and Effects
(4) STAFF
Prerequisite: consent of instructor.

In-depth analysis of the literature on administrator behavior and effects in educational organizations, including preparation of independent critiques.

249A. Field Experience in Educational Administration
(1-8) CHRISPEELS
Prerequisite: consent of instructor.

May be repeated for credit.

School site based field experience working with local school administrators. Eight units are required to meet California Teacher Credential requirements for the Administrative Services Credential.

249D. Practicum in Human Resource Administration
(2) STAFF
Prerequisite: consent of instructor.

The course addresses the practical dimensions of human resource administration and the need to attract, retain, develop, and motivate school personnel in ways that enhance student learning and lead to a positive and productive school climate.

249E. Practicum in Use of Technology in Education
(2) STAFF
Prerequisite: consent of instructor.

This course will examine and use technology for instructional and adminstrative purposes in schools, including acquisiton, community support, faculty use, curriculum development, potential impacts on student learning. Students will develop a technology plan for a school as part of the course requirements.

249F. Creating Equitable Learning Environments
(2) STAFF
Prerequisite: consent of instructor.

Prospective educational leaders use a problem-based model to explore policies and practices necessary for creating inclusive schools that meet the needs of diverse learners. Students examine issues of race, socioeconomics, gender, disabilities, and language including self-examination of bias and assumptions.

250A-B-C-D. Doctoral Seminar in Educational Leadership and Organizations
(4-4-4-4) STAFF

Prerequisite: consent of instructor.

A seminar for post-comprehensive exam students with the intent of helping to define areas, problems, specific questions, and methodologies for doctoral research. Topics and instructors may vary from quarter to quarter.

251. Families, Schools, and Communities
(4) CHRISPEELS

Prerequisite: consent of instructor.

Course explores the critical link between families, schools, community and children's school success. Examines history, theory and practice of home-school-community partnerships and addresses skills needed by educators for success with diverse families and interagency collaboration.

253D. Seminar in Teaching and Learning
(1-6) STAFF

Prerequisite: consent of instructor.

May be repeated for credit.

In-depth consideration of emerging topics in teaching and learning. Course content may vary.

254. Instructional Supervision and Curriculum Design
(4) STAFF

Prerequisite: consent of instructor.

A study of systematic approaches to supervision, and basic conceptions about curriculum theory, design, and evaluation. The role of the administrator as supervisor and developer of curriculum is also examined.

255A. Being a Student
(4) BLOCK

This course focuses on the nature of the student role. Specifically it examines school and classroom life from the student perspective drawing on literature from educational sociology, social psychology, and anthropology.

255B. Being a Teacher
(4) BLOCK

Classrooms are considered as social systems. Special attention is paid to the roles of student and teacher using literature from sociology, social psychology, and anthropology.

258A. Seminar in Curriculum: Reading
(4) DIXON

Prerequisite: consent of instructor.

Recent developments, review, and evaluation of current research in curriculum will be explored.

258B. Seminar in Curriculum: Mathematics
(4) BIANCHINI, BRENNER

Prerequisite: consent of instructor.

Examination of mathematics curricula from several points of view: historical, theoretical, and in practice. Special attention will be given to comparing curricula advocated by the reform movement to curricula currently used in schools.

258D. Seminar in Curriculum: Science
(4) BIANCHINI, KELLY

Prerequisite: consent of instructor.

The course covers the review and evaluation of recent developments in curriculum development and research in science.

259. Psychopathology
(4) BEUTLER

Prerequisite: consent of instructor. Same course as Psychology 244.

Empirical and clinical approaches to understanding the antecedents, processes, and modification of psychopathology.

260. The Languages of Psychotherapy
(2) BEUTLER

Prerequisite: Education 265.

May be repeated for credit to a maximum of 8 units.

Explores how different cultural languages are expressed in clinical assessment and interviewing. Spanish, Korean and other languages will be explored.

261A. Multicultural Organization Management
(4) STAFF

Prerequisite: consent of instructor.

Introductory course on the theory and practice of leading multicultural groups such as project reams, boards, and training groups. There will be an experiential component to this class.

261C. Human Resource Development
(4) CONLEY

Prerequisite: consent of instructor.

Human resources as a "frame" for examining what individuals bring to their organizations, performances/experiences; what happens as various organizational systems deal with individual organizational members; choices organizational members make about jobs and careers; and the role of interpersonal and group processes.

262. Seminar in Professional Psychology
(4) MORRISON

Consideration of emerging topics in counseling, clinical, and/or school psychology. Course content may vary.

263A. Advanced Counseling Theories and Techniques
(4) BEUTLER

Prerequisites: Education 265 and 275.

Exploration of techniques of psychodynamic, cognitive-behavioral, behavioral, experimental, and systems theories through prominent psychotherapy manuals. Students develop basic proficiency in one of these manuals and address their value for diverse populations.

263B. Consultation in the Schools and Community
(4) MORRISON

Prerequisite: consent of instructor.

Review of major models of consultation (e.g., mental health, behavioral, organizational) as they apply to school and community settings. Emphasis is on the development of generic techniques of problem solving, conflict resolution and program development.

264A. Administration of Guidance Services
(4) STAFF

Prerequisite: consent of instructor.

Students are exposed to a variety of counselor roles, counseling techniques, and current issues associated with school counseling.

264B. Developmental Psychopathology
(4) JIMERSON, MORRISON

Prerequisite: consent of instructor.

An introduction to the domain of Developmental Psychopathology, the study of psychological problems in the context of human development. Emphasis on the developmental origins and developmental consequences of social, emotional, and behavioral disturbances during childhood and adolescence.

264C. Principles of Behavior Management
(4) KOEGEL

History and philosophy of behavior management approaches; behavioral assessment procedures; treatment delivery paradigms; parent-training; non-aversive/aversive issues; generalization and maintenance of treatment gains; cause, evaluation of behavior changes, medicine, self-management.

264D. Psycho-Educational Strategies in the Schools
(4) MORRISON

Group and individual strategies for prevention and intervention with children and adolescents in the schools. Problems and processes involved in the implementation of these strategies and programs by support services personnel will also be explored.

264E. Serious and Emotional Disturbance: Internalizing and Externalizing Disorders
(4) FURLONG, MORRISON

Prerequisite: consent of instructor.

The characteristics, assessment, and intervention for students with serious and emotional disturbances with internalizing and externalizing disorders.

265. Basic Practicum
(4) NEUFELDT

Prerequisite: admission to Counseling/Clinical/School Psychology Program.

This course provides students with the opportunity to practice basic helping skills in interviewing and assessing in conjunction with material presented in Education 266B.

266B. Cognitive Assessment in Professional Psychology
(4) JIMERSON

Prerequisites: concurrent enrollment in Education 219A; consent of instructor.

This course provides in-depth coverage of the Wechsler series, the Stanford Binet (4th ed.) and other major tests of cognitive ability. A general approach to test administration and interpretation is stressed. General issues in test bias are used to guide class discussion.

266C. Personality Assessment in Professional Psychology
(4) ZANE

Prerequisite: Education 219A.

Students will learn how to evaluate, administer, score, and interpret assessment instruments commonly used in professional psychology to evaluate normal and abnormal aspects of personality, mood states, affective states, and behavior patterns. MMPI, Rorshach, 16 PF, and Personality Inventory for Children will be used.

266D. Behavioral and Emotional Assessment of Children and Youth
(4) FURLONG

Prerequisites: Education 266B and consent of instructor.

A course for students interested in behavioral and developmental testing and procedures as part of a comprehensive assessment of behavioral and emotional development in children/youth. Presentation of major behavior rating scales, self-reports, and individually administered tests.

267. Group Dynamics
(4) STAFF

Prerequisite: consent of instructor.

Theoretical and experiential introduction to group processes in small face-to-face groups. Course will include participation in a self-analytic training group.

268A. Advanced Fieldwork: General
(4) STAFF

Prerequisite: Education 265.

Practice in defined developmental or therapeutic models with a focus on specific populations in the Ray E. Hosford Clinic.

268B. Advanced Fieldwork: School Psychology
(4) FURLONG, MORRISON

Prerequisites: three quarters of Education 268A.

Advanced supervised fieldwork in an approved school setting under supervision of a credentialed school psychologist. A minimum of two full days of fieldwork plus supervision at the university are required.

268C. Advanced Fieldwork: Counseling Psychology
(4) ATKINSON

Prerequisites: three quarters of Education 268A.

Advanced supervised fieldwork in an approved counseling setting under the supervision of a licensed psychologist. A minimum of two full days in an approved setting is required.

268D. Advanced Fieldwork: Clinical Psychology
(4) KOEGEL

Prerequisite: Education 268A.

Advanced supervised fieldwork in an approved clinical setting under the supervision of a licensed psychologist. A minimum of two full days in an approved setting is required.

268E. Advanced Fieldwork in Counseling: Counselor Education
(4) NEUFELDT

Prerequisites: at least 8 quarters of practicum experience in a clinical, counseling, or school setting; and consent of instructor.

Supervised fieldwork experience in the supervision of beginning counselors. A minimum of three hours per week of classroom experience and work in individual and group supervision seminars.

268F. Internship in School Psychology
(6-12) FURLONG

Prerequisite: Education 268B.

Advanced internship in school psychology in a setting approved by faculty. Twenty to 40 hours weekly of fieldwork under the supervision of a credentialed school psychologist are required.

268IF-IW-IS. Internship in Professional Psychology
(6-12) COSDEN

Prerequisites: consent of instructor and advancement to candidacy.

A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Education 268IS.

Advanced fieldwork internship in an approved setting. Twenty to forty hours weekly (minimum of 1500 hours) of fieldwork under supervision of a licensed psychologist. Setting must be approved by CCSP faculty. May take for 12 units/quarter for one year, or 6 units/quarter for two years. Total of 36 units required.

268J. Practicum in International Cross-Cultural Mental Health
(4) BEUTLER, ATKINSON

Prerequisite: Education 265.

Course may be repeated up to 12 units.

Student is placed at selected sites including Europe, Asia, Australia or South America where they provide supervised services.

269A. Family Therapy
(4) COSDEN

Prerequisite: Education 265.

Focus on systems theories of family therapy. Topics include: Strategic, Systemic, Structural, and Bowenian theories of family therapy.

269B. Counseling Children
(4) COSDEN

Prerequisite: Education 265.

Focus on the application of counseling and psychotherapy to children and adolescents. Topics include: theories and practice of play therapy, short term school-based counseling, and other types of verbal therapy.

270A. Classrooms as Cultures
(4) GREEN

Prerequisite: consent of instructor.

This course examines classrooms as cultures and overviews anthropological studies of classroom processes to identify factors that support and/or constrain learning in classrooms. Topics to be explored include: classroom discourse, school culture, peer culture, situated learning.

270C. Race and Ethnicity in American Education: A Comparative History
(4) STAFF

Prerequisite: consent of instructor.

Offers a historical overview of minority education in our public schools with emphasis on urban multiethnic student populations and their struggle for educational equity. A research paper is required.

270D. Seminar in Crosscultural Education: Concepts and Theories
(4) STAFF

Prerequisite: consent of instructor.

Presents the theoretical foundations of cross-cultural education with emphasis on its history, rationale, and objectives.

270G. Crosscultural Curriculum Development in Content Areas
(4) STAFF

Prerequisite: consent of instructor.

Offers the theoretical rationale for curriculum development in cross-cultural education with its specific goals and objectives in social science, mathematics, science, and related areas.

270H. Language, Culture and Learning
(4) STAFF

Prerequisite: consent of instructor.

Explores the effect of language, culture, background, and values on learning processes and the implications for the development of appropriate instructional strategies.

271A. Sex and Gender Issues
(4) STAFF

Prerequisites: Education 265A and 275.

Overview of sex and gender in counseling process and outcome. Topics will include sex/gender of counselor, sex/gender of client, lifespan development and problems of men and women, counseling across sex and across gender identification.

271B. Counseling of Women
(4) NEUFELDT

Prerequisite: consent of instructor.

Topics include: (1) facts, myths, and trends regarding female roles, and their implication for counseling; (2) female sex-role socialization and its impact on psychological adjustments; (3) research on counselor attitudes towards women and men; (4) counseling needs of special groups of women.

272. Developmental Discontinuities of Children and Youth
(4) FURLONG, MORRISON

Prerequisite: consent of instructor.

Examination of non-pathological developmental problems in children and youth including behavioral concerns encountered by teachers and parents: bedwetting, tantrums, noncompliance, childhood fears, and other topics.

273. Risk and Resiliency
(4) FURLONG, MORRISON

Prerequisite: consent of instructor.

An in-depth review of research literature related to risk and resiliency concepts based on research from fields of developmental psychopathology, developmental delay, school drop-out, and substance abuse prevention.

274. Proseminar in Language, Interaction, and Social Organization
(2-4) COOK-GUMPERA

Prerequisite: consent of instructor.

Same course as Sociology 274 and Linguistics 274. May be repeated for credit.

Discussion of current research, literature, and theoretical and methodological issues in language and social interaction.

275. Theories of Counseling and Psychotherapy
(4) CASAS

Develops an understanding and appreciation of the major philosophies and theories in the field of professional psychology. Special attention directed toward examination of applicability of theories and inherent techniques to racial/ethnic minority populations.

276. Services in the Schools
(4) FURLONG, MORRISON

Prerequisite: consent of instructor.

Consideration of social, legal, and administrative aspects of providing services to children in the schools who are at-risk or have disabilities. Prevention, intervention systems, special education services, pupil personnel services, school-linked services, child welfare and attendance systems will be covered.

277A. Ethical Standards in Professional Psychology
(4) ATKINSON

Prerequisite: consent of instructor.

Course examines scientific and professional ethics in applied psychology. In addition to reviewing existing standards, the course focuses on a range of ethical and legal issues such as confidentiality, dual relationships, and client rights.

277C. Theories of Career Development
(4) BROWN

Prerequisite: consent of instructor.

This course focuses on theories of career development, current trends in research and the input of technological and social changes in the society on the role of work in life span development.

277D. Current Research in Professional Psychology
(4) STAFF

Prerequisite: consent of instructor.

This course focuses on current process and outcome research in counseling psychology. Implications of current research for future research, practice, and counselor education are discussed.

277E. Historical and Philosophical Foundations of Professional Psychology
(4) CASAS

Prerequisite: Education 275.

This seminar will facilitate a selective and critical analysis of the historical/philosophical foundations of western psychology. To this end, attention will be directed to those individuals, ideas and events that have shared the history of psychology.

277F. Theory and Research of Group Counseling
(4) ATKINSON

Prerequisite: consent of instructor.

The course reviews current theory, research, and practices related to group counseling. Special attention is given to comparisons of theoretical approaches and accompanying research used in assessing the effectiveness of group counseling modalities.

277G. Differential Treatment in Special Populations
(4) BEUTLER

Prerequisites: Education 263A and consent of instructor.

An advanced course in the intervention series which focuses on developing treatment programs to meet individual needs. Problem presentations, social environments, personal characteristics, demographic backgrounds and expectations related to planning settings, modes, formats, and psychological procedures.

277H. Career and Life Development Appraisal
(4) BROWN

Examination of the structure, administration, and interpretation of career and life development assessment instruments. Also examination of instruments commonly used in counseling, clinical, or school psychology research.

277I. Professional Psychology and Social Change
(4) ATKINSON

The role of professional psychology in promoting social change is examined. Topics include the profession's past and future role in promoting global peace, human rights, and social programs.

277J. Counseling Strategies for Developmental Concerns
(4) STAFF

Examination of individual and group counseling strategies and counseling agency services designed to meet client educational and developmental needs not attributable to a mental disorder.

277K. Supervision Theory
(4) NEUFELDT

Prerequisites: Education 268A-B-C.

An overview of theory and research on the

process and outcomes of supervision of professional psychologists.

278A. Social and Cultural Bases of Diversity
(4) ATKINSON

Prerequisite: consent of instructor.

Discussion of the experiences of racial/ethnic minority groups, gay men, and lesbian women, disabled persons, and the elderly. Examination of variables affecting their mental health needs.

278B. Racial/Ethnic Minority Counseling Interventions
(4) CASAS

Prerequisite: consent of instructor.

Critical examination of prevailing counseling intervention strategies with racial/ethnic minorities. Focus on identification of ways to improve the quality and utility of the interventions.

278C. Racial/Ethnic Minority Research Across Institutional Settings
(4) CASAS

Prerequisite: consent of instructor.

Identification and critical examination of the methodological issues inherent in racial/ethnic minority counseling research. Focus on helping students design research projects relative to racial/ethnic minorities.

280. Seminar: Issues and Trends in Crosscultural Education
(4) STAFF

Prerequisite: admission to doctoral study.

Examines significant issues and research trends related to the theory and practice of cross-cultural education at the national, state, and local levels.

281. Seminar: Program Design in Crosscultural Education
(4) STAFF

Prerequisite: admission to doctoral study.

A systematic study of major program models in crosscultural education, including the analysis of current teaching methodologies and the design of effective programs to meet the special needs of minority students.

285. Clinical Appraisal
(4) BEUTLER

Prerequisites: Education 219A, 266B, and 266C.

This course presents advanced concepts in psychological evaluation. Primary focus is on integration of psychological assessment data and report writing. Special attention is given to the needs of different settings and the influence of culture, gender, and age on psychological test data.

286A. Contemporary and Historical Perspectives on Science Education
(4) KELLY

Prerequisite: consent of instructor.

Focus on contemporary research issues in science education in relation to historical perspectives of the field. Course readings and agenda will be partially set by the interests of the students.

286B. Science Education in Sociocultural Context
(4) KELLY

Prerequisite: consent of instructor.

Exploration of science and school science from a sociocultural perspective drawing on scholarship from the sociology, philosophy, and discourse of science.

286C. Learning Theories and Instructional Practices in Science Education
(4) BIANCHINI, KELLY

Prerequisite: consent of instructor.

Exploration of contemporary theories of learning and instruction in science education. Students examine and critique research on constructivism, groupwork, inquiry, project-based science, multicultural science education and science-technology-society approaches.

286D. Issues of Gender and Ethnicity in Science and Science Education
(4) BIANCHINI, KELLY

Prerequisite: consent of instructor.

Examination of recent scholarship related to issues of gender and ethnicity in science and science education. Readings are drawn not only from the field of science education, but from the history, philosophy and sociology of science.

286E. Research on Science Teaching and Science Teacher Education
(4) BIANCHINI, KELLY

Prerequisite: consent of instructor.

Designed primarily for master's and doctoral students interested in teacher education and/or science education. Examination of current research on the professional development of science teachers focusing on both preservice and inservice programs.

286ST. The History, Philosophy, and Sociology of Science in Science Education
(4) BIANCHINI, KELLY

Prerequisite: consent of instructor.

Exploration of the nature of science—what science is, how scientific knowledge is constructed, and how science and society interact—as well as ways to teach the nature of science to students. Primarily for pre-service science teachers.

287. Neurophysiology and its Behavioral Correlates
(4) BEUTLER

Prerequisite: consent of instructor.

Provides an in-depth coverage of human neurophysiology from both a normal and neuropathological perspective. Emphasis will be in neurophysiology, however, neuropsychological assessment instruments that identify various types of neuropathology will also be covered.

288. Psychopharmacology for Psychologists
(4) BEUTLER

Prerequisite: consent of instructor.

Provides a working knowledge of psychoactive substances as they pertain to the treatment and management of child and adult psychiatric disorders. Clinical applications, research findings, positive and negative effects, and general treatment course.

290. Seminar in Autism
(4) KOEGEL, SINGER

Prerequisite: consent of instructor.

An overview of diagnostic and treatment methods in the area of autism. Discussion topics include research on language, social behavior, self-injury, self-stimulation, research on physiological, educational, and behavioral interventions used in clinical, school and family settings.

291. Professional Issues in Severe Developmental Disabilities
(4) KOEGEL, SINGER

Prerequisite: consent of instructor.

Study of professional issues and development of projects in the areas of clinical work with children and families, experimental analyses of severe behavior problems, preparation of articles for publication, organization of national conventions and grant writing.

292A. Mathematics Development in Early Years
(4) STAFF

Prerequisite: consent of instructor.

Explores how pre-school and early elementary school children acquire early logical and mathematical understanding. The acquisition of counting, cardinal, and ordinal understanding, mathematical operations, and the representations of mathematical ideas by children will be addressed.

292B. Mathematics Development in Middle Years
(4) BRENNER

Prerequisite: consent of instructor.

This course looks at how elementary school children learn mathematics in specific topical areas such as word problems and rational numbers. Implications for instruction will be discussed.

292C. Mathematics Development in Adolescents
(4) BRENNER

Prerequisite: consent of instructor.

This course examines mathematical problem solving at the secondary and college level. Different approaches to problem solving will be discussed in terms of the relevant theories, mathematics curricula and instructional delivery.

293. Mathematics: Cultural Comparisons
(4) STAFF

Prerequisite: consent of instructor.

Investigation of mathematics instructions and achievements from a cross national perspective. Both formal and informal mathematics applications will be reviewed. Sources of information will include the International Education Assessment (IEA) studies of mathematics as well as sources from anthropology, sociology, and educational journals.

295. Seminar in Instructional Leadership
(4) BLOCK, CHRISPEELS

Prerequisite: consent of instructor.

Seminar course which deals with a variety of topics related to leadership in instruction.

296A. Educational/Psychological Characteristics of the Severely Handicapped Child
(4) STAFF

Prerequisite: consent of instructor.

Theoretical and applied models for the education of SH children. Historical and cultural perspectives, service needs of severely handicapped.

296B. Assessment, Instruction, Evaluation of Severely Handicapped Students
(4) STAFF

Prerequisite: Education 296A.

Methods of systematic assessment, instruction, and evaluation including observational techniques, curriculum development, and single subject evaluation design for teaching severely handicapped.

298A. Research Practicum I
(1) STAFF

Prerequisite: consent of instructor.

Student works with research team to develop or conduct an on-going research study. Focus on learning the process of planning and carrying out a research program.

298B. Research Practicum II
(3) STAFF

Prerequisites: Education 298A and consent of instructor.

Student works with research team to develop a research idea and carry it out. Focus on implementing research plans and writing research reports in a collaborative group.

298C. Research Practicum III
(3) STAFF

Prerequisites: Education 298B and consent of instructor.

Student works with faculty member to develop and carry out a research project of particular interest. Focus on planning and conducting research projects of particular interest to student.

299. Assessment and Treatment of Substance Abuse
(3) STAFF

Prerequisites: admission to counseling psychology program and consent of instructor.

This course covers diagnosis of substance abuse, current theories of the etiology of substance abuse, and major treatment approaches to alcoholism and chemical dependence.

TEACHER PREPARATION

Professional preparation in teaching (300-393 series): These courses are designed for the professional sequence in approved credential programs. They provide theory related to field practice in teaching and cover the design of instruction, teaching strategies, development of instructional materials, and the psychology of learning. The student teaching experience provides the opportunity for application of university course work in practice. Courses in the 392 series have as a prerequisite admission to a teaching credential program at UCSB. The Education 392 series courses coincide with the calendar of the public schools.

R390AF-AW-AS. Multicultural, Social, and Linguistic Factors in Teaching English as a Second Language
(1-1-1) STAFF

Prerequisites: Education R390F-W and admission to the Single Subject Credential Program. A three-quarter in-progress sequence course with grades for all quarters issued upon completion of Education R390AS.

Practical theories and teaching strategies for teaching students from diverse language groups will be examined and practiced through workshop styles.

R390F-W. Procedures for Secondary Reading
(2-1) STAFF

Prerequisite: admission to the Single Subject Credential Program. A two quarter in progress sequence course with grades for both quarters issued upon completion of Education R390W.

Application of research and theory to procedures in the teaching of reading through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs. Designed to coincide with semester system of public schools.

SC390F. Curriculum and Instructional Procedure and Materials Used in Teaching English in the Secondary School
(3) STAFF

Prerequisite: admission to Single Subject Credential Program.

Seminar for student teachers in classroom applications of educational theory to the teaching of English.

SM390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Mathematics
(3) STAFF

Prerequisite: admission to Single Subject Credential Program in mathematics.

Procedures, curriculum, research, and theory related to teaching and learning mathematics.

SPS390. Special Education in the Secondary School
(4) STAFF

Prerequisites: admission to Single Subject Credential Program. Graduate standing.

A survey course in special education for students preparing to teach at the high school level. Topics include educational policy, instructional modification, and the role of the teacher in meeting the education needs of the handicapped adolescent.

SS390F-W-S. Instructional Procedures Used in the Teaching of Social Studies
(1-1-1) STAFF

Prerequisite: admission to Single Subject Credential Program in social sciences.

This course is required of candidates for the Single Subject Credential in one of the following social sciences: anthropology, economics, history, political science, sociology, geography, psychology, or combined social sciences.

ST390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Science
(3) STAFF

Prerequisite: admission to Single Subject Credential Program in life sciences or physical sciences.

Lecture-discussion sessions considering secondary school science curriculum materials, and the objectives and teaching strategies appropriate to these materials.

E391AF. Materials Used in Teaching of Mathematics in Elementary Schools
(3) STAFF

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program.

The application of research and theory to classroom practice in the teaching of mathematics.

E391BW-BS. Elementary Science Teaching Procedures
(2-1) STAFF

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Education E391BS.

An application of research and theory to classroom practice in the teaching of science.

E391CW-CS. Elementary Social Studies Teaching Procedures
(2-1) STAFF

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program. A two quarter in progress sequence course with grades for both quarters issued upon completion of Education E391CS.

The application of research and theory to classroom practice in the teaching of social studies.

E391DF-DW. Elementary Reading and Language Arts Teaching Procedures
(3-1) STAFF

Prerequisite: admission to the Multiple Subjects Credential Program. A two quarter in progress sequence course with grades for both quarters issued upon completion of Education R391DW.

Application of research and theory to classroom practice in the teaching of reading and language arts through problem solving situations, inductive reasoning and discovery, and adapting instruction to individual reading needs.

E391E. Teaching Strategies: Bilingual/ Cross-Cultural Education
(3) STAFF

Prerequisites: consent of instructor and admission to the Bilingual/Cross-Cultural Emphasis Program.

An examination of theoretical frameworks for bilingual education. Students will also learn teaching methods for the Spanish-English classroom with particular emphasis on language arts.

E391F. Teaching Curriculum: Bilingual/ Cross-Cultural Education
(3) STAFF

Prerequisites: consent of instructor and admission to Bilingual/Cross-Cultural Emphasis Program.

A detailed examination and application of teaching methods for the Spanish-English bilingual/ cross-cultural classroom in the areas of science, mathematics, social science, reading, writing, and culture. Examination of materials and development of new and appropriate materials.

E391G. Applications of Theory: Bilingual/ Cross-Cultural Education
(3) STAFF

Prerequisites: consent of instructor and admission to Bilingual/Cross Cultural Emphasis Program.

Applications of theory and policy will be analyzed for purposes of teaching applications. ESL and bilingual teaching methods will be reviewed and connected with classroom application through student teaching experiences.

E391HF-HW-HS. Multicultural, Social, and Linguistic Factors in Teaching English as a Second Language
(1-1-1) STAFF

Prerequisite: enrollment in Multiple Subject Teaching Credential Program. A three quarter in progress sequence course with grades for all three quarters issued upon completion of Education E391HS.

Practical theories and teaching strategies for teaching students from diverse language groups will be examined and practiced through workshop styles. Methods such as TPR, Natural Approach, and Sheltered Instruction will be presented.

E392F-W-S. Supervised Teaching: Elementary Schools
(5-12, 5-12, 5-12) STAFF

Prerequisite: admission to the Multiple Subject Credential Program.

Supervised teaching.

R392A-B. Multicultural Reading Field Experiences
(1-1) STAFF

Prerequisites: admission to Single Subject Credential Program; consent of instructor.

Supervised field experience in multicultural settings for secondary teacher candidates.

R392C. Multicultural Reading Field Experiences
(1) STAFF

Prerequisites: admission to Single Subject Credential Program; consent of instructor.

Supervised field experience in multicultural settings for secondary teacher candidates.

SC392. Student Teaching: English
(3-12) STAFF

Prerequisite: admission to Single Subject Credential Program. Admission to student teaching.

Field work, teaching one or more classes in English or related fields, grades 7-12, in a local school under the supervision of a master-teacher and university field supervisor.

SM392. Student Teaching: Mathematics
(3-12) STAFF

Prerequisite: admission to the Single Subject Credential Program in mathematics.

Supervised teaching at the secondary level in mathematics.

SS392. Student Teaching: Social Studies
(3-12) STAFF

Prerequisite: admission to the Single Subject Credential Program in social studies.

Supervised teaching at the secondary level in social studies.

ST392. Student Teaching: Science Education
(3-12) STAFF

Prerequisite: admission to the Single Subject Credential Program in science.

Supervised teaching at the secondary level in science.

E393. Seminar in Student Teaching
(1) STAFF

Prerequisite: admission to Multiple Subject Credential Program. Concurrent enrollment in Education E392.

This seminar will cover problems related to student teaching.

SC393. Problems Seminar in Teaching English
(1) STAFF

Prerequisite: admission to Single Subject Credential Program in English. Taken concurrently with supervised teaching in English.

This seminar will cover problems related to student teaching.

SM393. Seminar in Teaching Mathematics
(1) STAFF

Prerequisite: admission to Single Subject Credential Program. Taken concurrently with supervised teaching in mathematics.

This seminar will cover problems related to student teaching.

55393. Seminar in Teaching Social Studies
(1) STAFF
Prerequisite: admission to Single Subject Credential Program in social studies. Taken concurrently with supervised teaching in social studies.
This seminar will cover problems related to student teaching.

5T393. Seminar in Teaching Science
(1) STAFF
Prerequisite: admission to Single Subject Credential Program in science. Taken concurrently with supervised teaching in science.
This seminar will cover problems related to student teaching.

E394. Ethnography and Communication Skills Development
(2) STAFF
Prerequisite: admission to secondary or elementary credential program.
Designed to teach ethnography and communication skills to student teachers in order that they might engage in peer or collegial observation of one another.

395W-5. Practical Teaching Issues
(1-2) STAFF
Prerequisite: admission to Single Subject Credential Program. A two-quarter in-progress sequence course with grades for both quarters issued upon completion of Education 395S.
Seminar in various educational issues.

SE396. Writing Project Approaches to Teaching Composition, K-College
(1-6) STAFF
Approaches to teaching composition at all levels and in all disciplines. Features demonstrations of proven techniques by fellows, staff, professional authors, and visiting scholars from the South Coast Writing Project. Includes examination of theory and research base for practices.

ADVANCED STUDIES

Advanced study and research courses (500 series): The 596-599 series of courses are for advanced study and/or research. All students enrolling in 500-level courses must use instructor codes when registering (according to registration instructions distributed each quarter).

596. Directed Reading and Research
(2-12) STAFF
Prerequisite: consent of instructor.
Individual tutorial in doctoral and masters' degree subprogram special fields.

597. Individual Study for Comprehensive Examinations
(2-12) STAFF
Prerequisite: consent of instructor.
Preparation for master's or Ph.D. comprehensive examinations.

598. Master's Thesis Research and Preparation
(2-12) STAFF
Prerequisite: consent of instructor.
Supervised research and writing of the thesis in doctoral and masters' degree subprograms.

599. Ph.D. Dissertation Preparation
(2-12) STAFF
Prerequisite: consent of instructor.
Supervised research and writing of the dissertation in doctoral degree programs.

Appendix

University Officers

Effective July 2000

The Regents of the University of California

Regents Ex Officio

Gray Davis
Governor of California

Cruz M. Bustamonte
Lieutenant Governor of California

Robert M. Hertzberg
Speaker of the Assembly

Delaine Eastin
State Superintendent of Public Instruction

Kent Vining
President of the Alumni Associations of the University of California

Peter Taylor
Vice President of the Alumni Associations of the University of California

Richard C. Atkinson
President of the University

Appointed Regents

William T. Bagley
Ward Connerly
John G. Davies
Judith L. Hopkinson
Odessa Johnson
S. Sue Johnson
Meredith J. Khachigian
Joanne Kozberg
Sherry L. Lansing
Howard H. Leach
David S. Lee
Velma Montoya
John J. Moores
S. Stephen Nakashima
Michelle Pannor
Gerald L. Parsky
Peter Preuss
Tom Sayles

Regents-Designate

Iren Miura
Markell W. Kohn

Faculty Representatives to the Board of Regents

Lawrence Coleman
Michael Cowan

Appointed Officers of The Regents

James E. Holst, *General Counsel and Vice President - Legal Affairs*
Leigh Trivette, *Secretary*
Patricia A. Small, *Treasurer*

Office of the President

Richard C. Atkinson
President of the University

C. Judson King
Provost and Senior Vice President—Academic Affairs

V. Wayne Kennedy
Senior Vice President—Business and Finance

W.R. (Reg) Gomes
Vice President—Agriculture and Natural Resources

William H. Gurtner
Vice President—Clinical Services Development

Vacant
Vice President—Health Affairs

Bruce B. Darling
Vice President—University and External Relations

University Chancellors

Robert M. Berdahl
Chancellor at Berkeley

Larry N. Vanderhoef
Chancellor at Davis

Ralph J. Cicerone
Chancellor at Irvine

Albert Carnesale
Chancellor at Los Angeles

Carol Tomlinson-Keasey
Chancellor at Merced

Raymond L. Orbach
Chancellor at Riverside

Robert C. Dynes
Chancellor at San Diego

J. Michael Bishop
Chancellor at San Francisco

Henry T. Yang
Chancellor at Santa Barbara

M.R.C. Greenwood
Chancellor at Santa Cruz

Administrative Officers *Santa Barbara Campus*

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Chancellor

Robert W. Kuntz
Assistant Chancellor—Budget and Planning

Ilene H. Nagel
Executive Vice Chancellor

Stanley Awramik
Acting Associate Vice Chancellor

Ronald W. Tobin
Associate Vice Chancellor—Academic Programs

David N. Sheldon
Vice Chancellor—Administrative Services

Everett R. Kirkelie
Associate Vice Chancellor—Administrative and Auxiliary Services

John M. Wiemann
Vice Chancellor—Institutional Advancement

Peter E. Steiner
Assistant Vice Chancellor—Alumni Affairs

Cheryl Brown Lohsé
Assistant Vice Chancellor—Development

Vacant
Assistant Vice Chancellor—Public Affairs

France A. Córdova
Vice Chancellor—Research

Michael D. Young
Vice Chancellor—Student Affairs

Betty J. Huff
Assistant Vice Chancellor—Enrollment Services and Management

College of Letters and Science

Everett Zimmerman
Provost

David Marshall
Dean, Humanities and Fine Arts

Edward I. Donnerstein
Dean, Social Sciences

David J. Chapman
Dean, Mathematical, Life, and Physical Sciences

JoAnn Kuchera-Morin
Associate Dean, Computing and Technology

Alan J. Wyner
Dean, Undergraduate Studies

College of Creative Studies

William J. Ashby
Provost

Armand Kuris
Associate Provost

College of Engineering

Matthew V. Tirrell
Dean

Glenn E. Lucas
Associate Dean for College Advancement and Planning

Robert G. Rinker
Associate Dean for Academic Affairs

Ed Kozlowski
Assistant Dean

Donald Bren School of Environmental Science and Management

Jeff Dozier
Dean

Graduate School of Education

Jules Zimmer
Dean

Admissions

William Villa, *Director*

Davidson Library
Sarah Pritchard, *University Librarian*

Graduate Division
Charles Li
Dean
Diane Mackie
Associate Dean

Off-Campus Studies
John C. Maxwell, *Dean*

Office of the Registrar
Beverly Q. Lewis, *Registrar*

Office of Student Life
Yonie Harris, *Dean of Students*

Relations with Schools
Vacant, *Director*

Student Academic Support Services
Yolanda M. Garcia, *Executive Director*

Student Development Services
Vacant, *Executive Director*

Summer Sessions
Loy Lytle, *Director*

University Extension
John C. Maxwell, *Dean*

University Office of Education Abroad Program
John A. Marcum, *Director*

National Research Centers

Institute for Theoretical Physics
David J. Gross, *Director*

Materials Research Laboratory
Anthony K. Cheetham, *Director*

National Nanofabrication Users Network
Evelyn Hu, *Director*

National Center for Ecological Analysis and Synthesis
O. J. Reichman, *Director*

Optoelectronics Technology Center
Larry A. Coldren, *Director*

Southern California Earthquake Center
Ralph Archuleta, *Director*

Organized Research Units

Center for Chicano Studies
Carl Gutierrez-Jones, *Director*

Institute for Computational Earth Systems Science
Catherine Gautier, *Director*

Institute for Crustal Studies
Ralph Archuleta, *Acting Director*

Institute for Social, Behavioral, and Economic Research
Richard P. Appelbaum, *Director*

Marine Science Institute
Steven D. Gaines, *Director*

Neuroscience Research Institute
Steven K. Fisher, *Director*

Quantum Institute
S. James Allen, *Director*

Multicampus Research

U.C. Linguistic Minority Research Institute (LMRI)
Russell W. Rumberger, *Director*

Affiliated Units

Center for Black Studies
Claudine Michel, *Acting Director*

Center for Computational Modeling and Systems (Alexandria Digital Library)
Terence R. Smith, *Director*

Center for Control Engineering and Computation
Petar V. Kokotovic, *Director*

Center for Information Processing Research
Allen Gersho, *Director*

Center for Non-Stoichiometric Semiconductors
Umesh Mishra, *Director*

Center for Portuguese Studies
João Camilo Dos Santos, *Director*

Center for Risk Studies and Safety
Theofanis G. Theofanous, *Director*

Center for Robust Nonlinear Control of Aeroengines
Petar Kokotovic, *Director*

Compound Semiconductor Research Center
Mark Rodwell, *Director*

Engineering Computing Infrastructure
Glenn E. Lucas, *Director*

High Performance Composites Center
Francis (Frank) Zok, *Director*

Innovative Microwave Power Amplifier Consortium Center
Umesh Mishra, *Director*

Interdisciplinary Center for Wide Band-Gap Semiconductors
James Speck, *Director*

Interdisciplinary Humanities Center
Simon Williams, *Director*

Multidisciplinary Optical Switching Technology Center
John E. Bowers, *Director.*

Ocean Engineering Laboratory
Marshall P. Tulin, *Director*

Natural Reserve System

Natural Reserve System
Scott D. Cooper, *Director*
Wayne R. Ferren Jr., *Associate Director*
David Coon, *Administrative Advisor*

Carpinteria Salt Marsh Reserve
Wayne R. Ferren Jr., *Reserve Director*
Leal Mertes, *Faculty Manager*

Coal Oil Point Reserve
Cristina Sandoval, *Reserve Co-Director*
Kevin Lafferty, *Reserve Co-Director*
Steve Gaines, *Faculty Manager*

Santa Cruz Island Reserve
Lyndal Laughrin, *Reserve Director*
Sally J. Holbrook, *Faculty Manager*

Sedgwick Reserve
Michael Williams, *Reserve Director*
Frank Davis, *Faculty Manager*

Valentine Eastern Sierra Reserve (includes Valentine Camp and Sierra Nevada Aquatic Research Laboratory)
Daniel R. Dawson, *Reserve Director*
John M. Melack, *Faculty Manager*

Endowed Chairs

At UC Santa Barbara, private philanthropic support is central to maintaining the quality of teaching, research, and public service. One of the most important types of gifts to higher education is an endowed chair, for an endowed chair ensures faculty excellence.

Created by a philanthropic gift, these highly prized academic positions are supported by earnings from invested funds. While the state budget pays for the faculty member's salary, the proceeds from the endowment provide enrichments – such as research money and support for instruction – that are important to the recruitment and retention of the world's greatest scholars.

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Fred Lange, ALCOA Professor of Materials

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College of Engineering
Richard A. Auhll, Donor
Matthew Tirrell, Auhll Professor and Dean of Engineering

Fred Kavli Chair in MicroElectroMechanical Systems TechnologCollege of Engineering
Fred Kavli, Donor
Noel MacDonald, Kavli Professor in MEMS Technology

Fred Kavli Chair in Optoelectronics and Sensors
College of Engineering
Fred Kavli, Donor
Larry Coldren, Kavli Professor in Optoelectronics and Sensors

Donald W. Whittier Chair in Electrical Engineering
Electrical and Computer Engineering Department
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Herbert Kroemer, Whittier Professor of Electrical Engineering

College of Letters and Science

James and Sarah Argyropoulos Chair in Hellenic Studies
College of Letters and Science
James and Sarah Argyropoulos, Donors
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Spanish and Portuguese Department
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Juan B. Avalle Arce, Barandiarán Professor of Basque Studies

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Music Department
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Environmental Studies Program
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Funded by the Estate of Dr. Katherine Esau

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Chicano Studies Department
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Communication Department
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International Shinto Foundation, Donor
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William Murdoch, Storke Professor of Ecology, Evolution and Marine Biology

Charles A. Storke II Chair
Molecular, Cellular and Developmental Biology Department
Charles A. Storke II, Donor

Koichi Takashima Chair in Japanese Cultural Studies
East Asian Languages and Cultural Studies Department
Kyoei Steel Ltd., of Japan, Koichi Takashima - President and CEO, Donor
John Nathan, Takashima Professor of Japanese Cultural Studies

Donald Bren School of Environmental Science and Management
Donald Bren Chairs in Environmental Science and Management
School of Environmental Science and Management
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Neuroscience Research Institute
Eleanor L. Harriman and Thomas J. Harriman, Donors

University Policies and Regulations

Nonresident Tuition Fee

If you have not been living in California with intent to make it your permanent home for more than one year immediately before the residence determination date for each term in which you propose to attend the University, you must pay a nonresident tuition fee in addition to all other fees. The rules and regulations for establishing residency for tuition purposes are defined by the University of California Board of Regents which is authorized by the California Legislature, (SOR 110-2), to provide classification for a tuition differential between resident and nonresident students.

Reduced Nonresident Tuition. Effective Fall 1997, the annual nonresident tuition fee is reduced by 75 percent for graduate doctoral students who have advanced to candidacy, subject to the understanding that: (a) a graduate doctoral student may receive the reduced nonresident tuition rate for a maximum of three years; and (b) any such student who continues to be enrolled or who re-enrolls after receiving the reduced fee for three years will be charged the full nonresident tuition rate that is in effect at the time.

Establishing California Residence for Tuition Purposes

Please note: This summation is not a complete explanation of the laws regarding residence. Applicable sections of the Education Code and the regulations adopted by The Regents of the University of California are available for inspection at the Office of the Registrar. Please note that changes may be made in the residence requirements between the publication date of this statement and the relevant determination date.

An individual, a U.S. citizen or eligible noncitizen, must establish residency in California before he or she is entitled to pay resident tuition rates. The requirements to establish residency for tuition purposes are independent from those of other types of residency, such as voting or holding public office. A resident for tuition purposes is someone who meets the requirements set forth in the University of California Board of Regents Policy Relating to Residence and summarized here.

These regulations for residency apply only to the University of California. Tuition classification as a resident at a California State University or California Community College does not mean that a student will be classified as a resident when transferring to a University of California campus.

All three of the following requirements must be met for classification as a resident:

A. Twelve months of continuous physical presence.
An adult person (18 years or older) must physically reside in the state for the twelve consecutive months immediately preceding the residency determination date for the term for which resident classification is requested.

B. Intent to establish a domicile.
Objective evidence of intent to be a resident of California is demonstrated by the absence of ties to the former state of residence for twelve consecutive months. If implementation of the following actions is delayed, the commencement of the one-year period will be delayed.

1. California driver's license or identification card.
2. California motor vehicle registration.
3. Employment history in California.
4. Filing of state and federal tax return as a California resident.
5. California vehicle registration.
6. Transfer of major banking and/or investment services to California.
7. Change of permanent address on all pertinent records.
8. All other materials of whatever kind or source which may have bearing or determining domicile or residency status.

C. Financial independence.
For purposes of residency determination, financial independence means a student's ability to meet his or her own expenses from self-generated funds under his or her control. A student will generally be considered financially independent if her or she is:

1. At least 24 years of age by December 31 of the calendar year for which he or she is requesting resident classifications;
2. A veteran of the U.S. Armed Forces;
3. A ward of the court, or both parents are deceased;
4. Has legal dependents other than spouse;
5. Married, or a graduate student or professional student, and was not claimed as an income tax deduction by both parents or any other individual for the tax year immediately preceding the term for which he or she is requesting resident classification;
6. A single undergraduate student and was not claimed as an income tax deduction by parents or any other individual for the two tax years immediately preceding the term for which the student is requesting resident classification and can demonstrate self-sufficiency for those years.

Please note that these criteria apply to financial independence as it relates to residency determination and does not necessarily apply to financial aid determination of independence.

General Rules Applying to Minors

If you are an unmarried minor (under age 18), the residence of the parent with whom you live is considered to be your residence. If you have a parent living, you cannot change your residence by your own act, by appointment of a legal guardian, or by the relinquishment of your parent's right of control. If you lived with neither parent, your residence is that of the parent with whom you last lived. Unless you are a minor alien present in the U.S. under the terms of a nonimmigrant visa which precludes you from establishing a domicile in the U.S., you may establish your own residence when both your parents are deceased and a legal guardian has not been appointed. If you derive California residence from a parent, that parent must satisfy the one-year durational residence requirement.

Exemptions From Nonresident Tuition

Member of the Military: If you are a member of the U.S. military stationed in California on active duty, unless you are assigned for educational purposes to a state-supported institution of higher education, you may be exempt from the nonresident tuition fee until you have lived in California long enough to become a resident. You must provide the Residence Deputy with a statement from your commanding officer or personnel officer stating that your assignment to active duty in California is not for educational purposes. The letter must include the dates of your assignment to the state.

Spouse or Other Dependents of Military Personnel: You are exempt from payment of the nonresident tuition fee if you are a spouse, a natural or adopted child, or a stepchild who is a dependent of a member of the U.S. military stationed in California on active duty. The exemption is available until you have lived in California long enough to become a resident. You must petition for a waiver of the nonresident tuition fee each quarter you are eligible. Financial independence is not required for students who are dependents of a member of the armed forces stationed in California on active duty.

Non-resident Students Dependent on California Residents: If you have not been an adult resident of California for more than one year and you are the dependent child (natural or adopted) of a California resident who has been a resident for more than one year immediately prior to the residence determination date, you may be entitled to a waiver of the nonresident tuition until you have resided in California for the minimum time necessary to become a resident so long as you maintain continuous attendance at a post-secondary institution.

Child or Spouse of Faculty Member: To the extent funds are available, if you are an unmarried dependent child under age 21 or the spouse of a member of the University faculty who is a member the Academic Senate, you may be eligible for a waiver of the nonresident tuition fee. Confirmation of the faculty member's membership on the Academic Senate

must be secured each quarter before this waiver is granted.

Inquiries and Appeals

Inquiries regarding residence requirements, determination, and/or recognized exemptions should be directed to either:

Residence Deputy, Office of the Registrar
Student Affairs and Administrative Services Building (SAASB) 1105
University of California, Santa Barbara
Santa Barbara, CA 93106-2015
Telephone: (805) 893-3033

OR

Office of the General Counsel
Legal Analyst-Residence Matters
1111 Franklin Street, 8th Floor
Oakland, CA 94607-5200

No other University personnel are authorized to supply information relative to residence requirements for tuition purposes. Any student who believes that an incorrect residence classification has been made by the Residence Deputy may appeal in writing to the legal analyst within 45 days of notification of the Residence Deputy's final decision.

Incorrect Classification

If you were incorrectly classified as a resident, you are subject to reclassification and to payment of all nonresident tuition fees not paid. If you concealed information or furnished false information and were classified incorrectly as a result, you are also subject to University discipline.

To Change Classification

If you are a continuing student, and wish to change your residence classification from nonresident to resident status you must petition at the Office of the Registrar. All changes of status must be initiated on or before the deadline listed in the *Schedule of Classes* for the applicable quarter.

Student Grievance Procedure

UCSB is in compliance with all legislation which seeks to eliminate discrimination toward students. Titles VI and VII of the Civil Rights Act of 1964 prohibit discrimination on the basis of race, color, national origin, and religion. Title IX of the Educational Amendments of 1972 prohibits discrimination on the basis of sex. Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 prohibit discrimination on the basis of disability. Policy action by the Regents of the University of California prohibits discrimination on the basis of age and sexual orientation.

Members of the UCSB campus staff are available to answer students' questions about nondiscrimination policies and procedures. Information and copies of the grievance procedure are available from these offices:

Office of Vice Chancellor—Student Affairs
Michael D. Young, Vice Chancellor
Allyn Fleming, Pr. Administrative Analyst
Cheadle Hall 5203, (805) 893-8784

STUDENT GRIEVANCE PROCEDURE

Who	What	Where	When*
Student	Files formal complaint	Office of the Vice Chancellor-Student Affairs	Within 90 days of grievable action
Vice Chancellor-Student Affairs	Forwards complaint	1. To designated investigator(s) 2. To head of department where alleged violation occurred 3. Affirmative Action Coordinator 4. Title IX Compliance Officer, if sex related	Within 5 days of receipt of complaint
Department Head	Files written answer to charges	With designated investigator(s)	Within 10 days
Investigator(s)	Examines circumstances of charge and reports findings	1. To Vice Chancellor-Student Affairs 2. Department 3. Student 4. Copies to Affirmative Action Coordinator and/or Title IX Officer	Within 10 days of department head reply or 20 days after receipt of complaint
Student	Presents written request for formal hearing	To Vice Chancellor-Student Affairs	Within 10 days of receipt of investigator'(s) report
Vice Chancellor-Student Affairs	Arranges for impartial hearing; student chooses hearing entity	Campus location	Within 30 days
Vice Chancellor-Student Affairs	Notifies grievant and department head of hearing time and date	Personally or by registered mail	15 days before hearing date
Each party	Exchanges evidence	To be agreed upon	Within 7 days before hearing
Hearing entity	Reports findings; makes recommendations	To Vice Chancellor-Student Affairs	Within 30 days after hearing
Vice Chancellor-Student Affairs	Makes decision based on report and recommendations	To both parties and their representatives; To Affirmative Action Coordinator and/or Title IX Officer	Within 15 days from receipt of report
Student	Files appeal	To Chancellor	Within 30 days from date of report
Campus	Keeps all hearing records	As designated by the chancellor and subject to privacy and disclosure legislation	For 3 years

**All time referred to shall be working days.*

Sexual Harassment Complaint Resolution Officer/Title IX Coordinator
Paula Rudolph
Cheadle Hall 2121, (805) 893-2546

Office of Student Life
Yonie Harris, Dean of Students
Student Affairs and Administrative Services Building (SAASB) 2201, (805) 893-4569

Administrative Services
Linda Raney, Americans with Disabilities Act Coordinator
Cheadle Hall 4129, (805) 893-2184

Women's Center
Deidre Acker, Director
Building 434, Room 141, (805) 893-3778

Disabled Students Program
Diane E. Glenn, Director
Student Affairs and Administrative Services Building (SAASB) 1201, (805) 893-2668 V/TDD

Ombuds Office
Geoffrey Wallace, Ombuds
Geoffrey Stearns, Associate Ombuds
Student Affairs and Administrative Services Building (SAASB) 1207, (805) 893-3285

Affirmative Action Office
Raymond Huerta, Coordinator
Cheadle Hall 2121, (805) 893-2089

Associated Students
Main Office
UCen, Room 1523, (805) 893-2566

Graduate Division
Mary E. McMahon, Assistant Dean
Cheadle Hall 3117, (805) 893-7109

Educational Opportunity Program
Yolanda Garcia, Director
Building 434, Room 110, (805) 893-3720

Any student who wishes to file a grievance arising from alleged discrimination (other than a contested grade) must do so at the Office of the Vice Chancellor—Student Affairs, (805) 893-3651, Cheadle Hall 5203. The accompanying chart summarizes the steps in the university's formal grievance procedure for discrimination.

Sexual Harassment

One form of sex discrimination is sexual harassment. UCSB has a policy prohibiting sexual harassment and providing a grievance procedure specifically for this form of discrimination. Copies of the grievance procedure for sexual harassment may be obtained from each of the above mentioned offices as well as the web site at ucsbuxa.ucsb.edu/sex-harass-complaints. In addition, the Chancellor has appointed a Sexual Harassment Complaint Resolution Officer. The task of the Complaint Resolution Officer is to assist individuals with their complaints of sexual harassment through the informal and formal procedures described in the sexual harassment policy

Individuals who file a complaint should know that civil law remedies, including but not limited to injunctions, restraining orders, or other orders, may also be available to them.

Further information and/or assistance can be obtained from the Sexual Harassment Complaint Resolution Officer, Paula Rudolph, Cheadle Hall 2121. Telephone (805) 893-2546.

Taxpayer Relief Act of 1997

The Taxpayer Relief Act of 1997 includes a number of educational tax benefits that may have an impact on students and their families. The act includes the following sections that involve the University reporting information on students to the Internal Revenue Service.

Hope Scholarship Tax Credit (effective January 1, 1998): a nonrefundable credit equal to a maximum of $1500 in out-of-pocket qualified tuition and fee expenses paid by or on behalf of a student for two tax years during which the student is enrolled at least half time in the first or second year of postsecondary education leading to a recognized degree or certificate.

Lifetime Learning Credit (effective July 1, 1998): a nonrefundable credit equal to 20% of the $5000 of qualified out-of-pocket tuition and fee expenses paid by or on behalf of a student enrolled in postsecondary course work at the undergraduate or graduate level leading to a recognized degree or certificate or to improved job skills.

Student Loan Interest Deduction (effective January 1, 1998): a deduction from income of up to $1000 in qualified education loan interest due and paid during the first 60 months of repayment.

To find out if you qualify for benefits under these or other provisions of the Taxpayer Relief Act, please contact a tax consultant or call the Internal Revenue Service. The University of California is not authorized to respond to tax questions.

For more information about the Taxpayer Relief Act, refer to this web site maintained for students at the University of California campuses: www.1098-T.com.

Student Right-to-Know and Crime Awareness and Campus Security Act of 1990

The following information is provided in compliance with the Student Right-to-Know and Crime Awareness and Campus Security Act of 1990.

Average Persistence and Graduation Rates

UCSB takes great pride in having one of the highest graduation rates after four years (42%) among public universities. After six years, over two thirds of UCSB's entering freshman class have graduated. See the accompanying chart for more information.

Campus Crime Rate

UC Santa Barbara is committed to providing for a safe and secure environment and supports a reporting philosophy that encourages victims or witnesses to report all incidents to the UCSB Police immediately. See the accompanying chart for more information.

Confidentiality and Accessibility of Student Records

The University of California campuses maintain various types of records pertaining to students. Student records—that is, those pertaining to students in their capacity as students—include but are not limited to academic evaluations, transcripts, test scores and other academic records, general counseling and advising records, disciplinary records, and financial aid records.

The disclosure of information from student records is governed in large measure by the Federal Family Educational Rights Privacy Act of 1974, by the California Public Records Act, by the Information Practices Act of 1977, by the State of California Education Code, and by university policy and procedures implementing these laws that protect the student's right of privacy, provide safeguards for the confidentiality of student records, and permit students access to their own records.

Pursuant to the Federal Family Educational Rights and Privacy Act of 1974 (FERPA), and the University of California Policies Applying to the Disclosure of Information from Student Records, students at the Santa Barbara campus of the University have the right:

1. To inspect and review records pertaining to themselves in their capacity as students;

2. To request that personally identifiable information from their student records be withheld from disclosure except to the extent that FERPA authorizes disclosure without consent;

3. To seek correction of their student records through a request to amend the records or a request for a hearing; and

4. To file complaints with the Department of Education regarding alleged violations of the right accorded them by the Federal Act.

Copies of the university's policies and campus implementation procedures can be obtained from and questions regarding various privacy regulations can be addressed to the Office of Public Affairs, 1124 Cheadle Hall. For the types and locations of student records maintained by the campus, and titles and addresses of the officials responsible for the records, please refer to Policy P-4005 in the UCSB Policies and Procedures Manual, available in campus offices.

The following information is designated as "directory information" and normally will be released by the campus without the consent of the student: name, current local and permanent address and telephone number, electronic mail address, date/place of birth, major, number of units currently enrolled in, class level, dates of attendance, degree/honors awarded, most recent school attended, athletic information including height and weight, and participation in officially recognized organizations. Students have the right to restrict the disclosure of this information. A form to restrict disclosure of any or all of this information may be submitted at the Office of the Registrar. A student requesting such restrictions should be aware, however, of the implications of such a request. For example, if a request is made to withhold from disclosure a student's name and degrees and honors received, the campus cannot make public any honors received by the student, such as election to Phi Beta Kappa, and cannot include the student's name and degree earned in any campus publication. Similarly, if a request is made to withhold from disclosure a student's name and dates of attendance, a student's status as a student cannot be verified for potential employers without the written consent of the

PERSISTENCE AND GRADUATION RATES

	% Persistence at:		% Graduation at:			
Years:	**One**	**Two**	**Three**	**Four**	**Five**	**Six**
Freshmen	88%	78%	1%	41%	65%	70%
Junior Transfers*	87%	42%	70%	76%	78%	79%

**Some non-returning transfer students have graduated.*

Persistence is the percentage of originally enrolled students still enrolled at UCSB after one and two years. Graduation rates indicate the percentage of students graduating after three, four, five, and six years at UCSB. Rates reflect Fall-to-Fall academic year.

UCSB SALARY AND EMPLOYMENT INFORMATION

Undergrad. Discipline	Average Salary		
Engineering	$47,500	Psychology	29,500
Business Economics	35,500	Social Sciences & History	29,500
Mathematics	35,500	Biological/Life Sciences	28,000
Law & Legal Studies	34,000	English & Literature	26,500
Interdisciplinary Studies	32,500	Arts	23,500
Physical Science	32,500	Unknown/Other	32,500
Communications	29,500	All Full-Time Workers	29,500
Environmental Studies	29,500		
Foreign Language/Linguistics	29,500		

Source: *"Survey of Recent UCSB Graduates—Spring 1998 Undergraduate Alumni" by the UCSB Office of Budget and Planning representing the median average full-time salary by undergraduate discipline. It should be noted that a wide variation in starting salaries exists within each discipline, based on job location, type of employer, personal qualifications of the individual, and employment conditions at the time of job entry.*

CRIME STATISTICS—UCSB POLICE DEPARTMENT

Number of reported occurrences reported to Police at UCSB for mandated reporting offenses:

Crime	1997	1998	1999
Homicide	0	0	0
Rape:			
by force	0	0	2
attempt	0	1	1
Other Sex Offenses	11	5	5
Robbery	3	0	2
Aggravated assault	2	2	3
Burglary	45	33	29
Larceny—Theft			
Bicycle	185	161	200
Auto	4	5	0
Other	214	180	190
Arson	2	1	0
Hate crimes	0	0	0

Number of arrests at UCSB for mandated reporting offenses

Offense	1997	1998	1999
Alcohol Offenses	45	78	94
Drug/Narcotics	47	27	35
Weapons	4	3	12

Number of occurrences reported anonymously to campus officials

Crime	1997	1998	1999
Homicide	0	0	0
Forcible Sex Offenses	3*	0	0
Non-Forcible Sex Offenses	0	0	0
Other Sex Offenses	0	0	0
Robbery	0	0	0
Aggravated assault	0	0	0
Burglary	0	0	0
Motor Vehicle Theft	0	0	0
Hate Incidents	0	0	10

* 2 offenses not reported until 1998

student. Further, if a student's last instruction to the campus was to withhold from disclosure the degree granted to that student, that information cannot be confirmed for a third party in connection with the appointment of the graduate to a new position or an honor that individual received.

Each fall, a free UCSB Associated Students *Student & Faculty Directory* is made available to all students. The directory lists the name, local address and telephone number, and permanent address of any enrolled student who has (a) answered affirmatively that he or she consents to be listed in the directory on the Personal Information Form that all students must complete every fall quarter; and (b) not requested that directory information be withheld by submission of the appropriate form to the Office of the Registrar. A negative response to the Student Directory Option will result only in the withholding of the student's name and address information from the Student Directory. Any student who wishes to have directory information withheld for purposes other than the Student Directory must complete a Not for Release form at the Office of the Registrar as described above.

Students are given an opportunity to examine and update their personal information at any time upon request at the Office of the Registrar or through the GOLD System accessible through the UCSB Homepage at www.ucsb.edu.

Campus Regulations Applying to Campus Activities, Organizations, and Students

Campus Regulations Applying to Campus Activities, Organizations, and Students is available, free of charge, in the Office of Student Life, Student Affairs and Administrative Building (SAASB) 2201. This document includes regulations relating to student activities as well as to academic misconduct. It also specifies conditions for the application of sanctions for unsatisfactory conduct.

Contested Grades

Any student who believes that a grade was assigned based upon criteria other than course performance may challenge that grade using Academic Senate Regulations A25 and A10. Graduate students should consult the Graduate Division on grades to be contested, regardless of level or college in which the course was taken.

Regulation A25

(A) In the Santa Barbara division the term grade assigned to an individual student, or in the College of Creative Studies the number of units assigned, may be challenged by that student on the grounds that the grade (or the number of units) was based on an evaluation of the student's work by criteria that were not clearly and directly related to the student's performance in the course for which the grade was assigned.

(B) If after speaking to the faculty member in charge of the course and department chair, a student wishes to contest a grade on such grounds, he/she must present a written appeal to an official designated by the Executive Committee, usually the Dean of Undergraduate Studies (or equivalent) of the appropriate school(s) or college(s) offering the course (hereinafter, "The Dean(s)"). This appeal must be submitted before the end of the term following the term in which the grade was assigned. Upon receipt of this appeal, the Dean(s) shall promptly seek to resolve the issue by consulting the parties involved and the chair of the instructor's department. If the chair was the instructor involved he/she shall not participate in these deliberations in any way except as one of the parties. In such cases, the Dean shall proceed to attempt to resolve the dispute independently. If the Dean was the instructor involved, he/she shall not participate in these deliberations except as one of the parties. In such cases, the immediate supervisor of the Dean(s) shall recommend to the Executive Committee an appropriate alternate for the Dean. If the complaint is resolved, the Dean(s) shall provide a letter describing the resolution to the student(s), instructor(s), and chair(s) involved.

(C) If these efforts are unavailing within 30 days following receipt of the student's initial written complaint by the Dean(s), the student may within the next 15 days present a final written appeal to the Executive Committee(s) of the respective college(s), a copy of which shall also be given to the Dean(s). If a member of the Executive Committee was the instructor involved, that person shall not participate in the case in any way except as one of the parties. As soon as feasible, the Dean(s) shall prepare a report for the Executive Committee providing the details of (i) the prior investigations, including information as to the allegations and the evidence produced by the student to establish the case; (ii) the instructor's response to the student's allegations; (iii) all other information the Dean may have gathered in the course of the investigation that bears on the credibility of the student's complaint. Copies of the Dean's report shall be sent to the instructor and the student, both of whom submit written comments to the Executive Committee within 30 days of receipt of the Dean's report. Having granted both parties a reasonable opportunity, the committee shall make a final determination within 60 days after receipt of the complaint. Should the Dean's investigation tend to demonstrate a pattern of faculty misconduct extending beyond the particular case, the Dean shall inform the Executive Committee which is then responsible for assuring that appropriate corrective actions are taken including but not limited to grade changes as specified in (D) below and referral of the case to other appropriate committees and agencies.

(D) If the Executive Committee decides that the grade (or units) assigned is (are) not reflective of the student's course performance, it shall authorize one of the actions stated below.

The committee may act only as follows:

1. authorize retroactive withdrawal from the course;
2. authorize a change of contested grade;
3. for courses offered in the College of Creative Studies, the Executive Committee shall determine the number of units to be assigned.

The committee shall report its decision to the Registrar for recording.

Regulation A10

(A) (SR 542) No student may enter upon any organized instructional activity until he or she has registered and his or her enrollment has been approved by the appropriate study-list authority. No student may begin or continue a course if the officer of instruction in charge considers him or her unqualified by lack of

preparation. Late registration may not be used to justify inadequate performance in a course.

(B) In the Santa Barbara division an instructor's refusal to permit a student to begin or continue a course may be challenged by the student on grounds that such refusal arises from discrimination on political grounds, or for reasons of race, religion, sex, ethnic origin, or for other arbitrary or personal reasons. The procedure for the initiation of such a challenge is set forth in regulation A25. However, the only final recommendations and decisions to be made by the officers and the committees therein specified shall be to deny or authorize the student's entry into or continuation in the course concerned.

UCSB Policy and Procedure on Substance Abuse

Policy

The University recognizes drug and alcohol dependency as treatable conditions and offers educational and counseling assistance to employees and students to aid them in dealing with problems associated with substance abuse. Employees and students, however, are prohibited from the *unlawful* manufacture, distribution, dispensation, possession or use of a controlled substance and/or alcohol in the workplace, on University premises, at University activities, or on University business.

In addition, employees and students shall not use illegal or abuse legal substances in a manner which impairs job performance, scholarly activities, or student life.

Employees directly or indirectly involved in work on or for a Federal grant or contract are required *as a condition of employment* on the grant or contract, to notify the University within five (5) calendar days if they are convicted of any criminal drug statute violation for activity occurring at the workplace, at the location of any grant/contract activity, or while on University business.

Purpose

UCSB is committed to achieving and maintaining a worksite and campus community that is free from the problems of substance abuse and dependency. The purpose of this policy is to help provide a safe and secure environment for work and study and to inform employees and students of the health risks and legal sanctions associated with substance abuse.

Definitions

Confidential information. Confidential information is defined as medical records regarding the identity of the individual, the diagnosis or treatment of drug or alcohol abuse, or records indicating referral to a drug or alcohol abuse program. This information is subject to protection under Federal and State laws and may not be disclosed without specific authorization by the employee or student, or where authorized or required pursuant to Federal or State laws and regulations.

Conviction. The term "conviction" means a finding of guilt (including a plea of *nolo contendere*) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violation of Federal or State criminal drug statutes.

Employee. For the purposes of these procedures, an employee is any person holding a University staff or academic appointment, including student, casual, temporary and contract employees on appointment.

Health Risks. Substance abuse may result in a wide spectrum of extremely serious health problems. Acute problems include heart attack, stroke and sudden death, which, in the case of some drugs such as cocaine, can occur after first-time usage. Long-lasting effects of drugs and alcohol may include disruption of normal heart rhythm, high blood pressure, leaks of blood vessels in the brain, bleeding and destruction of brain cells and permanent memory loss, infertility, impotency, immune system impairment, kidney failure, cirrhosis of the liver, and pulmonary damage. Drug use during pregnancy may result in fetal damage and birth defects causing hyperactivity, neurological abnormalities and developmental difficulties.

Legal Sanctions. There are numerous federal, state and local statutes and ordinances relating to the manufacture, distribution, dispensation, possession or use of a controlled substance or alcohol. See below for a summary of some of these laws.

Student. According to *Campus Regulations Applying to Campus Activities, Organizations, and Students*, a student is a person who is currently enrolled at the University, or, during a recess period between quarters or the summer period, one who has completed the immediately preceding term and is eligible for re-enrollment. If students are employed by the University, they are covered by those provisions applying to employees and those provisions applying to students.

Substances. The term "substances" includes both illegal and legal substances:

1. ***Illegal substances*** are controlled substances listed in the Federal Controlled Substances Act (21 U.S.C. 812) and further defined by regulations (21 CFR 1308), which are obtained illegally. A list of controlled substances is available in Academic and Staff Assistance Program (ASAP), Student Health Service—Alcohol/Drug Awareness Program, and Human Resources—Labor and Employee Relations.

2. ***Legal substances are:***

(a) Alcoholic beverages,

(b) Controlled substances as listed in the Federal Controlled Substances Act, that are prescribed or administered by a licensed physician or health-care professional, or purchased and used in accordance with *Business and Finance Bulletin 50 - Acquisition and Use of Narcotics and Dangerous Drugs* for approved scientific research,

(c) Over-the-counter drugs/products.

Procedure

Coverage

All UCSB employees and students are covered by the provisions of this Policy and Procedure.

Notification

UCSB shall provide informational materials and/or programs on substance abuse on an ongoing basis, and shall annually distribute copies of this Policy to all employees and students. In addition, a copy shall be given to each new employee hired and each new student registered after the annual distribution.

Counseling and Rehabilitation

1. Employees and students are encouraged to voluntarily seek assistance for substance abuse/dependency problems. Supervisors may also refer individuals with substance abuse problems to campus counseling services.

2. UCSB offers assistance to employees and students in obtaining treatment and counseling for substance abuse problems through the following programs:

(a) Academic and Staff Assistance Program (ASAP) counselors are available to employees to aid them in identifying community treatment programs.

(b) Student Health Service Alcohol/Drug Awareness Program counselors and Counseling and Career Services (CCS) counselors are available to students for short-term counseling and referral.

3. Information obtained during the course of participation in the above counseling programs will be treated as confidential and cannot be released without the written consent of the employee or student except as authorized or required by Federal or State Law.

Employee Job Performance and Substance Abuse

1. Employees are encouraged to seek assistance for drug- and alcohol-related problems and may request leaves of absence for this purpose, in addition to using approved vacation or sick leave, or attending employee support programs outside regular work hours.

2. When an employee's job performance appears impaired due to the use of an illegal substance or the abuse of a legal substance, including alcohol, the supervisor is obligated to take appropriate action to address the problem. Supervisors are encouraged to seek assistance from their department head, Human Resources—Labor and Employee Relations, Academic Personnel, or Academic and Staff Assistance Program (ASAP). Appropriate action is determined on a case-by case basis and may include, but is not limited to supervisory referral to ASAP, corrective action, or UCSB Police Department intervention.

3. Employees found to be in violation of this Policy or the University Policy on Substance Abuse may be subject to corrective action up to and including dismissal in accordance with the applicable Personnel policies and procedures, collective bargaining agreements, or Academic Senate policies and procedures. In addition to or in lieu of corrective action an employee may be required to participate in an approved

counseling or treatment program. Attendance in counseling or treatment programs does not relieve an employee from the obligation to maintain acceptable work standards nor should it delay appropriate corrective action.

Employees Directly or Indirectly Involved in Work on or for a Federal Grant or Contract

If an employee is involved in work on a Federal grant or contract and is convicted of any criminal drug statute violation for activity occurring in the workplace or while on University business, the following provisions apply. The following also applies to any employee not directly funded by the contract or grant but who provides significant supportive or overhead work for the grant or contract.

1. The employee must notify his/her supervisor within five (5) calendar days of the conviction. Failure by an employee to report a conviction within five (5) calendar days may result in corrective action, up to and including dismissal.

2. A supervisor who is notified by the employee or who learns through other reliable means that an employee has been convicted, must immediately (same day, if feasible) report the conviction to the UCSB Office of Research Development and Administration (ORDA). (Drug Free Workplace Act of 1988, Public Law 100-690, Title V, Subtitle D).

3. ORDA will in turn report the conviction to the Federal agency administering the contract or grant within ten (10) calendar days of receiving notice of a conviction. ORDA will provide written notice of the conviction, including the I.D. number of each grant and the position title of the employee, to every grant officer on whose grant the employee was working.

4. The employing department is required by law to take one of the following actions within thirty (30) days of notification of the conviction:

(a) Taking appropriate personnel action, up to and including termination, or

(b) Requiring the employee to participate satisfactorily in a substance abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

Students and Substance Abuse

1. All students are encouraged to seek assistance for drug and alcohol related problems from counseling or treatment programs.

2. All students engaged in the *unlawful* manufacture, distribution, dispensation, possession or use of a controlled substance and/or alcohol on University properties or at official University functions are subject to the University discipline provisions of the *Campus Regulations Applying to Campus Activities, Organizations, and Students.* Students found guilty of violating the University Policy on Substance Abuse or the UCSB Policy and Procedure are subject to disciplinary sanctions which may include loss of privileges and exclusion from activities, a letter of warning, suspension or dismissal. In addition to or in lieu of corrective action, a student may be required to participate in an approved counseling or treatment program.

Record Keeping

Departmental offices responsible for providing substance abuse-related educational programs or materials should maintain records of the programs/materials offered, the targeted groups, number of participants, and method of distribution, for biennial Federal audits of UCSB's efforts to create a drug-free environment.

References

Information about the documents used as references for this policy are available at Academic and Staff Assistance Program (ASAP), Student Health Service—Alcohol/Drug Awareness Program, and Human Resources—Labor and Employee Relations.

UCSB Intercollegiate Athletics Mission Statement

The primary mission of UC Santa Barbara Intercollegiate Athletics is to provide an opportunity for widespread participation in intercollegiate athletics and to enhance the student-athlete's education through competition at the Division I intercollegiate level. Because it demands the successful integration of intercollegiate competition with an academic program, the educational experience of student-athlete is unique.

In addition, Intercollegiate Athletics is intended to foster a sense of community among faculty, staff, and students on campus and to help provide a reason for friends, alumni, and supporters in the local area and throughout the state to feel a part of UCSB.

The university expects its Intercollegiate Athletics program to provide competitive opportunities for both men and women in a variety of sports.

Intercollegiate Athletics at UCSB is based upon an educational model, not upon a business model. The Intercollegiate Athletics program does not seek to make a profit from its athletic events, but does seek to generate a considerable portion of the revenue necessary to support itself at a level of excellence consistent with the university's standards.

UCSB places the highest priority on the academic progress of student-athletes and provides support systems to assist them in completing their degrees.

The primary mission of UCSB is teaching, research, and service. Associated with this is the development of the full potential of our students in both academic and non-academic settings. The Intercollegiate Athletics program plays a major role in achieving this goal.

The Intercollegiate Athletics program at UCSB is bound by the policies and procedures of the NCAA and the rules of any conference, league, or association of which it is a member.

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• Daily parking permits: $5.00.
• Permits are required 24 hours a day, year round, in areas/stalls marked "Enforced 24 hours", "At All Times", "Reserved" or "Restricted". Violators are subject to citation.
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